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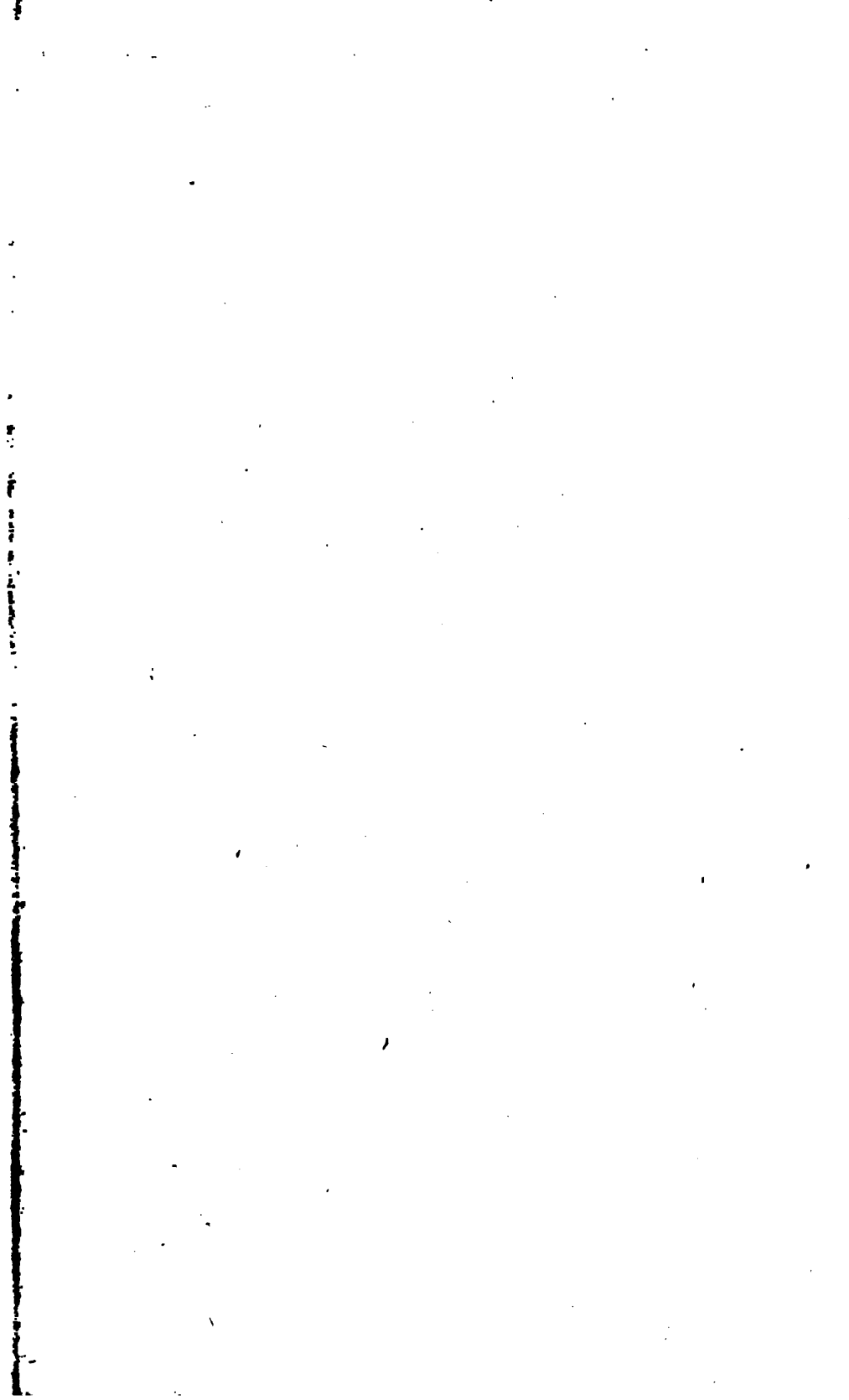
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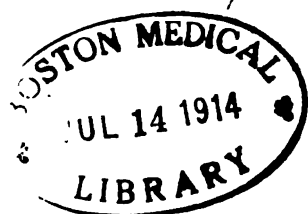
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THE OPHTHALMOSCOPE

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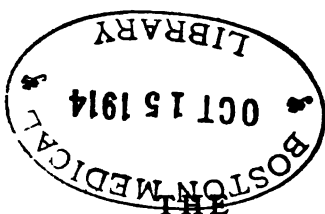
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ORIGINAL COMMUNICATIONS.

NEW CONQUESTS OF OCULAR THERAPEUTICS.

BY

DR. A. DARIER,

OF PARIS, FRANCE.

(Continued.)

I venture to return to the subject of the organic silver salts, the advantages of which are now recognised by all who have systematically used them in ocular therapeutics.

For some time past I have felt a desire to reply to the medical *plébiscite* of Dr. E. Alvarado, of Valladolid, who had requested ophthalmologists to state whether they preferred protargol or nitrate of silver. But during the intervening time protargol has been largely superseded by argyrol, which, at the present time, may be considered to be the ideal silver salt, by virtue of the amount of silver which enters into its composition, its perfect solubility, its powerful antiseptic properties, and, above all, by reason of its harmlessness, even in concentrated solutions.

About a month ago I received a request from a large firm of manufacturing chemists to make a trial of a new silver salt, and after having tested it, I found that it possessed just those properties which makes argyrol invaluable. This salt has not yet been put on the market, and, so far, has had no name given to it, which is rather a source of satisfaction to me than otherwise, since no one can now accuse me of giving it an advertisement.

To me the most interesting thing about the appearance of this new silver salt is, that it shows that chemists are at last commencing to comprehend the aspirations of therapists, who are looking out for a medicament which shall be the most effective and at one and the same time the least offensive. Nitrate of silver was, undoubtedly, a trustworthy remedy, but it was far from being innocuous, a fact admitted by Von Graefe himself, one of its earliest and most fervent advocates. In my opinion, the appearance of new salts of silver, identical with argyrol (which, as I believe, cannot be surpassed), is particularly interesting from the economical standpoint, as, being in competition one with the other will tend to lower the price of the organic preparations of silver. As a matter of fact, it is the rather excessive cost of these preparations which has hindered their introduction into a number of clinics. Consequently we shall shortly have at our disposal, not merely an expensive patented solitary salt of silver, but a whole range of similar products, which, by stress of competition, will allow us to make daily use of the organic silver salts with economy.

Reverting to the *plébiscite* of Dr. E. Alvarado, this author finds that the majority of oculists (31 in all!) prefer nitrate of silver to protargol; had it been otherwise, it would be useless writing anything further in favour of the organic silver salts.

For many years nitrate of silver has been the classical specific for ophthalgo-blennorrhœa, it being easily understood that those who are accustomed to practise the almost ancestral routine of this method of therapeutics, would experience some little difficulty in going through a new course of apprenticeship, with the object of obtaining what may be stated, in simple terms, as a little less danger and a little less pain. It has even been said: What does the pain matter, if one effects a cure? But let us not ask for impossibilities: let us leave the classical practitioners to continue to hold their preference for this cruel nitrate of silver. The patients themselves will take good care to inform them that they have succeeded in obtaining a cure elsewhere without pain, and in private practice this will be a most weighty argument, although in hospital work the patient may make no complaint. But it will take some little

time to affect this, and, in the interval, it is our duty to propagate what we believe to be sound doctrine.

When attempts were being made to replace nitrate of silver by iodoform, permanganate of potash, etc., I was one of the first to raise a protest; but is there really any substantial reason for preferring the nitrate to the phosphate, to the fluoride, or to any other similar silver salt? Have not chemists, physicians, and bacteriologists demonstrated that it is the metallic constituent which plays the most important part? No matter whether we employ the bichloride, the bi-iodide, or the peptonate of mercury in the treatment of syphilis, any of these will affect the same cure, when we take into account the proportion of metal present in each combination. It is merely a matter of custom, and anyone who is daily obtaining excellent results by the use of mercurial inunctions, which he has, so to speak, at his fingers' ends, will experience considerable difficulty in setting himself to administer cyanide of mercury by intra-venous injections; and yet the latter is the ideal of a precise and well-dosed therapeutics. Why should it not be the same in regard to nitrate of silver? What important influence can the nitric radical have on the bactericidal silver "ion," which is the true specific for the gonococcus, and for many other micro-organisms.

To come back to our subject once more, I have often reiterated the occasional very serious drawbacks in connection with nitrate of silver, but I cannot agree with the authors quoted by Dr. Alvarado, one of whom says that the nitrate of silver is infallible in blennorrhœa, while another advances the opinion that nitrate of silver will never give any trouble to practitioners who take care of their patients. Does the last-named mean us to infer that one is careful of one's patients, when one inflicts upon them the atrocious tortures which are produced by silver nitrate instilled into the eye, when one can just as readily cure the patient without giving him pain? Let one of these fervent admirers of nitrate of silver, by way of comparison, instil into his right eye a drop of one per cent. solution of nitrate of silver, and into the left eye a drop of 20 per cent. argyrol, and he will find the difference: very acute burning in the right eye, and entire absence of pain in the left. If he further wishes to compare the efficacy of the two agents, he will be able to try the microbicidal action of a given quantity of the two liquids named above, and he will find that in weak doses the nitrate of silver is perhaps rather the more powerful bactericide, but that in doses which are easily borne by the eye, argyrol will undoubtedly prove its superiority.

With reference to protargol, this proof was made by Neisser

long ago. Now, argyrol is superior to protargol in every respect. It contains 30 per cent. of metallic silver, whereas protargol does not contain more than 8 per cent. ; and, besides, protargol does cause some little pain. In my own practice I have not used nitrate of silver for the last six years, and I have cured numerous cases of purulent ophthalmia, and this with fewer complications than I formerly observed when using nitrate of silver. I know perfectly well that, to a certain extent, it is a matter of custom, but, still, if it is possible to effect a cure after a certain course of apprenticeship, is it not well worth while for the doctor to go to this trouble in order to spare his patients the pain and the danger to which they are exposed by using nitrate of silver ? I am quite aware that the partisans of silver nitrate say that the agent in question is not dangerous. Of course, it is easy enough to say that complications as regards the conjunctiva (eschars or pseudo-membranes) and the cornea (infiltrations or ulcerations) are due to the malignity of the affection, whereas, as a matter of fact, they are often due to excessive cauterisation by too powerful solutions of nitrate of silver.

It must not be forgotten that there are idiosyncrasies, which, so to speak, cannot bear nitrate of silver, and in such cases even protargol was too irritating ; now, argyrol is infinitely less so—in fact, the irritation is scarcely worth mentioning. Is not this a source of great satisfaction to the practitioner, inasmuch as he has not to reproach himself with the accidents of which we have been speaking, and yet he can at the same time treat the patient with the greatest safety, and perhaps with even more success. Indeed, by the use of frequent instillations of argyrol, I have seen very serious cases of purulent conjunctivitis relieved in less than a week : and, in a former article, I have called attention to those premature cures which sometimes result in the treatment being discontinued too soon, thus allowing the patient to run the risk of relapses, which are always more difficult to cure.

Most of those who prefer the nitrate to the organic salts of silver do so because they have been unsuccessful with the latter, in consequence of not having used sufficiently large doses, and not repeated them often enough.

The organic salts of silver should be employed in the following way :

(1) As a prophylactic, immediately after the general toilet which follows the *accouchement*, two or three drops of a 20 per cent. solution of argyrol should be instilled into the eyes, between the lids, and then aseptic lotions of boiled water or boric acid will suffice. This practice, which is, moreover, much less dangerous and less painful, will give

results identical with those obtained by Credé's method. (2) In the treatment of cases of purulent conjunctivitis, the *modus faciendi* is of the simplest kind. The instillations of argyrol being absolutely painless, they may be repeated as often as desired, both night and day, and with this treatment there is no need to concern one's self with the contra-indication, known as the hyper-acute period, which is recognised by many practitioners in the application of nitrate of silver. At this moment when a very pronounced chemosis and a sort of induration of the eyelids opposes an obstacle to their eversion, just when these authors recommend waiting (?) and iced compresses, argyrol in a 25 per cent. solution, instilled between the eyelids every half-hour, accompanied by frequent lotions and hot compresses, produces remarkable results. In addition, once or twice a day, the surgeon will practise what I have termed *protargolage*—that is, soaping with protargol of the eyelashes and of the eyelids.* This saponification is the best means of disinfecting the region of the eyelashes and the surface of the eyelids. It is surprising to see how, in a day or two, thanks to this treatment, the swelling of the eyelids becomes less and the latter become supple, and in a few days the child will spontaneously half-open its eyes, which is the first sign of impending cure.

It is precisely at this juncture, when cure seems apparent, that precautions should be redoubled, and the number of applications should be increased rather than diminished, for with this remedy we get the reverse effect as compared with the inorganic combinations of silver, the organic preparations having an action which is at once rapid, gentle, and penetrating; but by these very properties they induce a rapid tolerance of the tissues to the micro-organisms, and I have learnt by experience that when one has to do with a serious case of purulent gonococcal ophthalmia, it should never be assumed that the patient is cured by the eighth day, and double care should be bestowed on the case just when the evil appears to be eradicated. Great care should therefore be taken not to reduce the number of instillations too quickly. It is advisable to space them out by slow degrees, taking good care to increase the frequency of their application when the conjunctival secretion appears to be slightly more abundant.

If, for any reason, the treatment has been discontinued too soon, and a serious relapse has taken place, and even although the tolerance to the argyrol should be evident, and the improvement should not be progressively constant, there is then a very clear indication to resort to a more caustic and energetic

*Vide *Leçons de thérapeutique oculaire*, page 171.

agent. In such cases I myself use ichtargan in 3 per cent. solution, with which I practise energetic cauterisations on the everted eyelids. Under these circumstances the partisans of nitrate of silver will be able to apply it without fear and with the greatest success, for the mucous membrane which has become accustomed to salts of silver will no longer react with the same vigour as it did at the beginning. They will thus secure all the advantages which are afforded by instillations of argyrol in the first instance, holding the nitrate of silver in reserve as a last and supreme resource.

The organic salts are thus capable of rendering, even to the partisans of nitrate of silver, the greatest service in the treatment of purulent ophthalmia, by serving as an advance-guard, and as a touchstone in the case of idiosyncrasies to silver nitrate.

But, thanks to obstetrical antiseptics, the true purulent ophthalmia is tending more and more to disappear, so that we often read that purulent ophthalmia is not always caused by the gonococcus, since there are cases of simple conjunctivitis which may present a purulent aspect.

There is one important point which cannot be too strongly emphasised, namely, that in the hands of an experienced surgeon there is practically no danger with silver nitrate, but it must not be forgotten that in most instances, and especially in small country towns and villages (and I have observed such cases even in Paris), the medical practitioner attends to cases of purulent ophthalmia himself, and hands them over to the care of the specialist only when he sees complications supervene. Now, these complications are generally caused by unduly strong solutions of nitrate of silver. I recently quoted a case where the doctor had prescribed a 10 per cent. solution of the nitrate. In another case a chemist had given 20 per cent. instead of 2 per cent. Such catastrophes cannot take place with the organic salts of silver, which are always harmless, no matter how great the strength employed, and, if the effect is not sufficiently energetic to satisfy the medical man, there is always time, as we have already pointed out, to resort to nitrate of silver.

(3) In all these cases of simple conjunctivitis, the most convinced partisans of silver nitrate are obliged to recognise that the organic salts of silver cure just as readily, or even better, and that without pain. And this is admitted by Dr. Alvarado himself; as he says: "For other maladies of the eyes, I use protargol in preference . . . Only a few days ago, I was treating a Sister belonging to a religious order, who was suffering from chronic conjunctival catarrh. For three months she had been treating herself with nitrate of silver and sulphate of

zinc, without result. The protargol effected a complete cure in three days, but protargol does not always give such good results."

It is now recognised that argyrol is the most efficacious organic salt of silver, that it is absolutely painless, and that it is easily handled. One can, therefore, without fear, entrust its application to the patient or to those who look after him.

(To be concluded.)

AN ADJUSTABLE STEREOSCOPE FOR TRAINING THE FUSION SENSE.

BY

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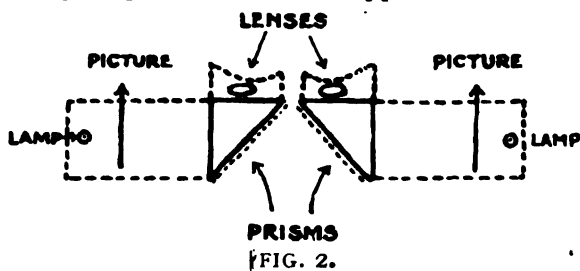
This instrument is a modified form of Worth's "Amblyoscope," the value of which in training the fusion sense is now so generally recognised. The new instrument stands securely on a table, and the substitution of total-reflecting prisms for mirrors prevents the confusion arising from the formation of double images. There is a strongly-made frame, containing the pictures, prisms, and lenses, provided with rack and



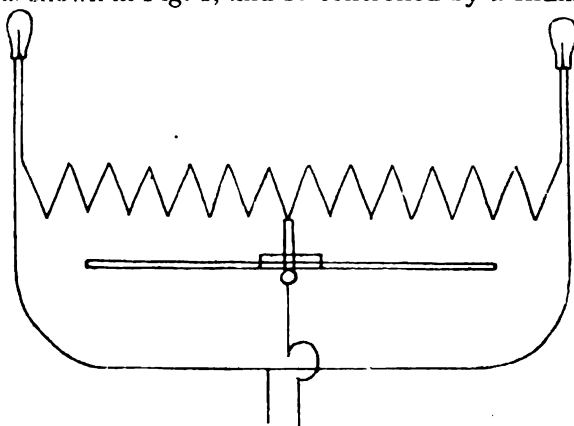
FIG. I.

pinion movements for adjustment to any pupillary distance from $1\frac{1}{2}$ inches to $2\frac{1}{2}$ inches. In Fig. 1, which gives a general view of the stereoscope, the fusion screen is seen in the centre, the adjustment screw on the left. Fig. 2 shows the optical principles. The patient places his eyes opposite the lenses and the centres are adjusted to suit the pupillary distance. Behind the lenses at the inner ends of the arms are the prisms.

The pictures, which are coloured and of a simple kind likely to interest young children, are dropped into slots one near



the outer end of each arm, and so placed that the picture lies at the focus of the lens. Behind each picture is a small electric lamp supplied with current, by wires passing in underneath, as shown in Fig. 1, and so controlled by a sliding bridge



resistance (Fig. 3, and knob behind fusion screw in Fig. 1), that the degree of illumination can be varied with the greatest nicety. While resistance is taken from the circuit of one



lamp, and the brightness of the light thereby increased, additional resistance is thrown into the circuit of the other





HYDATID CYST IN THE ANTERIOR CHAMBER.
(MR. THOMAS EVANS' CASE.)

with a corresponding diminution of its brilliancy. This method of lighting can also be adapted to the original Worth amblyoscope (Fig. 4), and will be found much more convenient than the usual method by means of lamps and sliding arms.

The instrument has been made, and the method of lighting arranged, by Mr. John Trotter, 40, Gordon Street, Glasgow.

HYDATID CYST IN THE ANTERIOR CHAMBER.

BY

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Levina L—, 6 years, was brought to the Sydney Hospital on the 10th May, 1894, and admitted on the 14th. Two months ago something was noticed wrong as regards the left eye.

Floating in the anterior chamber of the left eye (*see* plate), occupying the pupillary space, is a cyst, pearly in appearance and apparently unattached. On its anterior surface near its edge are two minute black points; its diameter is from 3 to 4 mm. In contact with the cornea anteriorly, its posterior wall touches the lens, for certain alterations in its shape are produced during accommodation. From time to time it makes a sudden rotatory movement equal in extent to half its circumference. It appears to be structureless, and a pale rose reflex can be seen through it from the fundus.

May 29th.—No change.

June 13th.—No increase of size nor any irritation.

June 19th.—I made an upward section, as if for cataract extraction but slightly smaller; gentle pressure with a curette on the lower half of the cornea caused the cyst to escape without rupture. It was unattached.

June 21st.—When the effect of the chloroform passed, the child became unmanageable. A prolapse of iris resulted.

June 23rd.—I removed the prolapse, and the child made a good recovery, with, as far as could be ascertained, very good vision.

Report on Cyst by Mr. Sydney Jamieson:

“A small, perfectly spherical, smooth-walled cyst, about half the size of an ordinary pea. In colour it is more or less opalescent with a delicate bluish-white tinge, and having on its surface two very minute black spots fixed upon the surface of the capsule. The wall of the cyst was, on section, found to be, relatively speaking, of considerable thickness. Its contents were of a pale watery appearance and the tension was

somewhat high. When resting upon a flat surface, the cyst almost retained its spherical character. To the unaided eye the fluid contents appeared slightly turbid. On incising the cyst wall, the edges of the capsule turned inwards, and the wall had the appearance (like coagulated albumin) usually found in the ectocyst of a hydatid cyst.

Microscopic Examination.—(1) *Capsule*.—When cut at right angles to its surface it was found to be made of a clear, finely-striated substance. The striations were most clearly marked near the outer surface, while that portion of the wall which was nearest the cyst cavity was found to be studded with minute, highly refractile, oval-shaped bodies. These bodies on the addition of an acid were seen to evolve a gas (probably CO₂). Some of these bodies were faintly stained by a yellowish-brown pigment. (2) *Fluid Contents*.—This was found to consist for the most part of a clear fluid, but there was also floating in it a few round and oval-shaped bodies similar to those found in the cyst wall. There were, in addition, here and there, found groups of oval-shaped bodies of about the size of an ordinary squamous epithelial cell. These bodies were grouped together, but were not enveloped by a capsule such as one finds surrounding the brood capsules of a hydatid cyst. Some of these bodies show at one point an indistinct resemblance to the circle of hooklets found in the scolex of a hydatid. No free hooklets were found. I was unable to make any satisfactory chemical examination of the fluid, owing to its small amount."

Remarks.—I am rather inclined to think that the cyst is a true hydatid cyst which has not yet arrived at that stage of maturity when the characteristic hooklets and brood capsules are found. The character of the cyst wall is, at any rate, exactly similar to that of the ordinary hydatid cyst, and does not resemble that found in the cysticercus.

THE "FULL CORRECTION" TREATMENT OF MYOPIA.*

BY

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THE object of this short paper is to place upon record my experience, now extending over a period of twenty years, of the "full correction" treatment of myopia and compound myopic astigmatism.

*Paper read at the Annual Meeting of the British Medical Association, Section of Ophthalmology, Oxford, July, 1904.

My treatment is, to estimate the error under a cycloplegic (atropine for patients under twenty and homatropine for older patients), and to order the full correction to be worn constantly. I correct the whole of the astigmatism, but in myopia of 7 or 8 D. or over I do not prescribe cylinders of less than 1 D. unless they improve vision. In many cases of high myopia, patients refuse to accept the full correction at first, but with this exception I never reduce the spherical lens, even for near work.

To illustrate the results of this treatment I have taken cases from my private note-books extending over a period of ten years. I have excluded all those: 1. who were over 40 years of age; 2. who had disease or the result of disease, such as cataract and corneal nebulae (except of course where the disease was directly attributable to the myopia); 3. who had monocular myopia; 4. or simple myopic astigmatism; 5. or a myopia of less than 0.75 D.

These cases numbered 1,129. I then found it necessary to exclude all patients who had been under observation for a period less than *two* years, and this brought the number down to 532. These 532 patients have been watched for an average period of $4\frac{1}{4}$ years, some only 2 years and others as long as 8 or 10 years. Of the 532 patients, in 469 the myopia, which ranged between 0.75 D. and 20 D., continued (or became) stationary, and of these in 162 the visual acuity improved.

In the remaining 63 the myopia progressed, but in 47 of these the increase, observed over an average period of $4\frac{1}{4}$ years, was only 1 D. or less, in 13, observed over the same average period, the increase was between 1 D. and 2 D., and it was only in the remaining 3 that the increase reached its maximum, which was 4 D.

If we exclude those whose maximum increase over 4 years was 1 D., we find only 16 patients out of 532 that had any increase to speak of, and if we consider that a maximum increase of 2 D. over 4 years is not serious, we are left with only 3 cases, *viz.*, .56 per cent., that had any serious increase, and even in these the maximum was only 4 D.†

I have taught for many years that this "full correction" treatment was *the* treatment, but I had no idea until I collected these figures, how successful it actually was.

There seems no doubt that by this full correction we lessen convergence strain and make the ciliary muscle perform its proper work, and I am quite sure that it is not only excessive convergence, but excess of convergence over accommodation, which causes progressive myopia.

†The average age of the 63 progressive cases was 15, and the myopia ranged between 1 D. and 11 D.

I hope later to deal with the question of age and many other interesting matters that my cases reveal, but my space is too limited now to do so. In those cases which showed active fundus changes the recognised treatment was adopted of removing them from school, stopping all near work, and, where possible, sending them into the country, *but the correcting glasses were ordered to be used constantly*. In not one of the cases did the question of discission arise. I feel sure that if this treatment were more generally adopted, especially in the young, progressive myopia would become rarer and rarer, and a myopia of 20 D. would, in years to come, be almost unknown.

TRAUMATIC KERATITIS IN THE NEW-BORN. (Two cases)

BY

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Introductory Remarks.—The attention both of ophthalmic surgeons and of obstetricians has recently been directed, by a valuable article¹ by W. Ernest Thomson and Leslie Buchanan, to certain injuries of the eye now and then sustained by the infant during instrumental birth. Amongst these lesions traumatic keratitis occupies a prominent place. Cases of the kind had been reported previously by Noyes,² Dujardin,³ de Wecker,⁴ Truc,⁵ Sidler-Huguenin,⁶ W. Ernest Thomson,⁷ and L. V. Cargill.⁸ In each of Thomson's three cases a more or less linear opacity of the cornea followed delivery by forceps. Cargill's patient presented similar clinical features: ten months after a difficult forceps confinement there was found a delicate, hazy band of opacity, lying in the vertical meridian of one cornea.

Apart from these isolated cases, however, nothing of importance was published on traumatic keratitis until the appearance in 1903 of the paper, already mentioned, by Drs. Thomson and Buchanan. The authors described three forms of this peculiar corneal lesion, namely (1) diffuse temporary opacity, (2) diffuse permanent opacity, and (3) permanent linear opacity. These injuries were all rare, even when difficult deliveries were alone counted. Pathological investigations showed that the first form was due to œdema; the second to œdema followed by inflammation, or, in some instances, to detachment of Descemet's membrane; and the third to linear rupture of the posterior elastic lamina or of the corneal lamellæ, with the subsequent formation of cicatricial tissue. In the opinion of the writers, the injuries were brought

about by the direct pressure of the forceps-blade. Although that is the usual explanation, yet it cannot be universally true, inasmuch as Thomson and Buchanan met with a diffuse opacity of the cornea after a head and arm presentation, where forceps were not employed. Sidler-Huguenin also believes that the corneal opacity is not invariably caused by the forceps-blade, since in two of his three cases the accoucheur positively affirmed that the blade of the instrument did not lie directly over the injured eye. The hard fact remains, however, that, with the exceptions noted above, every one of the cases hitherto reported has followed delivery by forceps.

A case of corneal oedema after forceps delivery has lately been reported* by Dr. Julius Fejér, of Budapest. The child was delivered by forceps twenty-nine hours after the beginning of labour. After birth the lids of one eye were swollen, the skin was excoriated, and several small bruises were present. An opacity of the cornea was noticed on the following day. The cornea then resembled ground-glass, but its surface lustre was not impaired. The pupil could scarcely be recognised. By the eighth day the cloudiness of the cornea had cleared away completely. Fejér surmises that the condition was caused by the pressure of one blade of the forceps on the eye.

A study of the recorded cases shows an agreement in the following particulars: 1st, that practically all have followed a difficult instrumental delivery; 2nd, that one eye alone is generally affected; 3rd, that they are associated with other signs of traumatism, as abrasions of the skin, bruises, sub-conjunctival or retinal hæmorrhages, hyphæma, etc.; and 4th, that a more or less characteristic form of corneal opacity is usually present.

Personally, I have recently met with a typical case of the kind in Queen Charlotte's Hospital. It is a somewhat curious fact that although, on the average, 1,200 births take place annually in the hospital, and that forceps are applied in fully ten per cent. of the births, yet the case to be described is the only one of injury to the cornea that has so far been recognised in the institution. This is the more significant as a careful look-out has been kept for cases of traumatic keratitis since the publication of Thomson and Buchanan's paper. These injuries, indeed, appear to be commoner in Glasgow than elsewhere, the reason probably being (as Thomson and Buchanan point out) that Glasgow is notorious for rickets, and, consequently, for contracted pelves.

Case No. 1.—The following are the notes of the case, for the obstetrical portion of which I am indebted to Dr. W. B. Swete-Evans, house physician at the hospital.

Mrs. J——, aged 41 years, was admitted on September 16th,

1904, under the care of my colleague, Dr. W. S. A. Griffith.

Upon enquiry, it was found that when five months pregnant with her first child, myomectomy was performed. The child, delivered with forceps, was still-born.

Upon admission.—The patient's height was 5 feet. Small round pelvis. Measurements were : interspinous, 8 inches ; intercrystal, 9 inches ; true conjugate, $3\frac{1}{4}$ inches ; and outlet, 3 inches. Persistent right occipito-posterior presentation. Under chloroform, the head was rotated manually, and Simpson-Barnes' forceps were applied. Considerable difficulty was experienced in delivery, a strong and long pull being necessary. One blade of the forceps was applied over the outer angle of the left orbit. The child, a male, weighed 8 lbs. $1\frac{3}{4}$ ozs. Immediately after birth, much bruising was noticed about the left frontal bone, and the eyelids on that side were considerably swollen. Next day the left cornea was found to be uniformly steamy, and there was marked hæmorrhage beneath the conjunctiva on the outer side of the cornea. Two days later (September 19th) the bruising was limited to the left lower eyelid, and the conjunctival ecchymosis had become less pronounced. The opacity of the affected cornea was diffuse, and resembled nothing so much as the steamy cornea of an eye with high tension (glaucoma). The pupil and the iris could, nevertheless, be recognised through the cloudy cornea. The anterior corneal epithelium was distinctly stippled. The mother had no antepartum vaginal secretion, and at no time had there been any discharge, purulent or otherwise, from the baby's eyes. On the 28th September the only evidence of injury was a small linear opacity lying vertically in the outer part of the cornea. Mother and child were discharged from the hospital on this date. No treatment for the eye had been adopted.



The baby was seen again on October 3rd, when the condition was as follows : no ecchymosis of skin, lids, or cornea. As

shown by the figure, a faint, more or less linear, opacity lay vertically in the outer third of the left cornea. On December 18th—that is, some three months after birth—the condition of the cornea was unaltered.

Case No. 2.—Paulina H—, 12 years, was brought to the Evelina Hospital, on November 1st, 1904, on account of defective sight. R.V. $\leq 5/60$; L.V. $5/12$. Atropine was prescribed, and a week later the girl's eyes were examined with the following result. The right cornea, was found to present two faint, grey, curvilinear lines, neither exceeding 0.5 mm. in width, running parallel with one another across the lower half of the cornea. The appearance of these curious marks was so strongly reminiscent of those in the cases described by Drs. Thomson and Buchanan as following instrumental delivery that I questioned the mother with regard to the details of the patient's birth. I then ascertained that the mother, a small woman, was 35 years of age when her first child, the patient Paulina, was born. The labour, a long and difficult one, was eventually terminated by forceps applied under chloroform by the two medical men in attendance. The baby, when delivered, was "as black as a coal," and was indeed at first believed to be dead. There were abrasions about the forehead and scalp. The right eye was noticed to be nearly shut, but the lids slowly assumed a more normal appearance under the influence of a domestic remedy in common use among the poorer classes in London, namely, a tea-leaf poultice. There have been three living children and two miscarriages since Paulina was born. This history, together with the peculiar lines found on the patient's cornea, left no doubt in my mind that I was dealing with an instance of traumatic keratitis. The truth of the mother's statement, moreover, was attested by the fact that two cicatrices were found on the patient's head; one above the right eye and the other behind the right ear. To complete the record, it should be added that the vision of the affected eye could be brought to $5/12$ with the following correction: -1.25 D.sph., with -1.50 D. cyl. axis 30° . Much irregular astigmatism was present.

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**DIXIÈME CONGRÈS INTERNATIONAL
D'OPHTALMOLOGIE À LUCERNE 3ème LIVRAISON
DU RECUEIL DES TRAVAUX. Section A.**

Third part of the Report on papers read at the 10th International Congress of Ophthalmology, held at Lucerne, September, 1904.

In the May Session of 1904, the French Ophthalmological Society decided to have a report on "visual acuity in its relations to incapacity for work," or putting it in other words, "on the influence of varying degrees of sharpness of vision on wage earning capacity." The report which was presented concluded with the institution of a collective enquiry to obtain the details of the visual acuity required for different trades. In the discussion which followed the presentation of the report, it became evident that the subject bristled with difficulties, and that instead of a collective enquiry, it would be more expedient that the investigation of the value of varying degrees of visual acuity in different occupations, should be committed to the hands of a small Committee of well-instructed specialists. The gentlemen who were appointed to form this Committee, were well chosen and were worthy of all confidence. It was composed of MM. Landolt, Sulzer, and Vignes, and the report they sent in to the Congress was accepted, and was as follows, Prof. Landolt dissenting from two clauses.

(1) Visual acuity should be founded on the minimum separable, that is to say, it should be determined by the smallest angle under which two black points, or two black lines, on a white ground, can be distinguished as distinct and separate. (2) The thickness of the lines, if lines are used, should be equal to the space by which they are separated. (3) Sharpness of vision, or visual acuity, should be defined by the inverse of the angle of the minimum separable in accordance with the progression to be immediately mentioned. (4) The unit of the scale or of the measure of visual acuity is to be represented by an angle sufficiently large to permit the degrees that are ordinarily met with in ophthalmic practice to be expressed in whole numbers. (5) The graduation of the series should progress according to the factor, 1.259; the physiological basis of this cypher rests on the diminution of visual acuity, that takes place with recession from the centre to the periphery of the macular region, a point that has recently been carefully investigated by M. Sulzer. (6) Visual acuity inferior to unity, may be expressed in tenths of the unit.

(7) The visual angle unit of the minimum separable will be $\frac{1 \text{ degree}}{5} = 0.20^\circ = 10' 48''$ or $V = 0.0926$ of the present system.

(8) Optotypes ought to be constructed in such a manner as to realize as far as possible the principle of the minimum separable. (9) The term "O.P.T." may be employed to designate the unit of visual acuity. (10) The Committee of the French Ophthalmological Society are to present the report to the International Congress that was about to meet at Lucerne. It need scarcely be pointed out that these propositions if supported by the International Congress and accepted by the profession generally, would have an important influence upon the rules of all insurance societies, of which there are many, and upon the question of compensation between master and workman, and between individuals in private life. They would be invested with the stamp of authority, would tend to create a just tariff, and would facilitate and render more uniform the recommendations of experts, and the awards of judges and juries for different degrees of injuries of the eyes.

The two clauses to which objection was made by Professor Landolt, are those which refer to the adoption of a co-efficient of progression, of which the successive powers constitute the degrees of the new series and were devised with the object of obtaining an equal interval between each step of the series. At present the unit of acuity corresponds to an optotype of which the interval appears under an angle of a minute, and $V = 2$ corresponds to double this acuity, that is to say to the same optotype placed at double the distance, and appearing in consequence under an angle of half the size. An acuity of one-half ($\frac{1}{2}$), corresponds to half the distance of the optotype or, when seen at an angle of twice the size, or two minutes, and so on. With the new system proposed, on the contrary, M. Landolt observes 2 "opts" by no means correspond to double the acuity of 1 "opt," but to an acuity 1.259 times higher than the visual acuity of 1 "opt." "How," Dr. Landolt continues, "How shall we make a non-initiated person such as a judge, understand that 6 'opts' do not represent six times greater visual acuity, but only 3.1633 times greater than 1 'opt,' and yet this would be the case with the new scale, where six 'opts' correspond to the fifth power of the factor 1.259, and what is the visual angle that corresponds to these six 'opts?' To find this we must multiply the factor, 1.259, six times by itself, and divide by this cypher, the fifth of a degree on 20 centigrades." Dr. Landolt therefore opposes the decimal system which is at the root of Dr. Sulzer's suggestions, and prefers to consider the unit of visual acuity, an angle of one minute which is at present in common use, and has been found to be eminently practical. Any change to

the decimal system would involve long and perplexing calculations which could not be carried out in the exigencies of practice. This reasoning seems unanswerable.

Leaving, then, the question of the unit of notation, which does not seem likely to be agreed upon, M. Sulzer commences his article on the value of an eye lost or damaged, by remarking that the value of an eye depends upon its sharpness of vision, and the use to which it is applied. The present French law gives to the workman, as a general rule, in cases of accident, a pension equal to one-half of the reduction of his wage, where the incapacity for work is partial and permanent. In case of absolute and permanent incapacity, the pension is equal to two-thirds of the annual wage. The same principle of valuation is very generally adopted in other countries, though disfigurement is sometimes taken into consideration. Diminution of vision is not considered as a subject for indemnity except in so far as it leads to a loss of wage. This mode of looking at the loss of one eye has given great importance to a problem which, up to the present time, has been but little agitated, namely, the determination of the visual acuity necessary to pursue such calling in life and the amount of reduction of salary that follows any diminution of visual acuity. M. Sulzer gives a table showing that the reduction of the professional or industrial value of the loss of one eye, amongst those pursuing various avocations, has been estimated at about 33 per cent. of their wages, leading to awards varying from 100 to about 400 francs per annum. The awards in most of the recorded cases were evidently based on a formula proposed by Prof. Zehender, but no longer used in Germany. The loss of an eye, it is to be remembered, does not necessarily occasion incapacity for work. Nieten found that amongst 85,000 miners, there were 320 one-eyed men, who worked and obtained the same wages as the others. Cohn found 21 amongst 1,283 metal workers.

The just estimation of the remarkable value of an eye is by no means so easy as it might at first sight appear. The expert finds it difficult even when he is appealed to as a friend by both the injured party and the employer or aggressor, but the difficulty is greatly augmented when the case is transferred to a court of law. Few but those who have been under the harrow can appreciate the misgivings which haunt the expert when he steps into the witness box, and feels that an astute opponent and a clever counsel are ready to take exception to almost every statement that is not expressed in guarded terms, he may make, and that his own experience by no means covers all the possibility of the case. Unless he be familiar with law courts he may be easily led to make

admissions that are very damaging to his case, and it is often better to have the courage to say frankly, "I do not know," than to make a guess which after evidence may prove to be quite wrong. In many cases we do not know what, if any, reduction in wage takes place as a result of injury to one eye, even when that eye is totally lost, and still less when the impairment of vision is only partial. Amongst the best statistics we possess on these points are those made by Magnus, on the metallurgic workers in Silesia, which showed that 261 one-eyed men obtained a wage amounting to 9.57 per cent. less than the average. Eliminating the workers who have entered the trade with only one eye, and those who have lost their eye otherwise than by accident of the work, it was found that the metallurgic workman who loses his eye by accident obtains 14.44 per cent. less wage than his fellow workman, the compensation varying in different cases from 50 per cent. downwards. M. Sulzer points out that in giving about 30 per cent. of the previous wage as compensation for the loss of one eye, experts and magistrates have alike neglected to take into account the nature of the trade followed. He gives a table which shows that the awards given to a locksmith, a joiner, a brewer, a pedlar, and a day labourer were all from 30 to 33 per cent., though the value of binocular vision was obviously very different. Sulzer contends, therefore, that with more precise notation, more fair and more just results could be arrived at and that in order to apply that notation, the effect of the injury, *i.e.*, the amount of damage to the vision, must be reduced to figures, and any deductions should be drawn from the comparison of many cases.

The relative importance of binocular and monocular vision in different trades has not by any means been satisfactorily worked out. To arrive at a just conclusion in any particular case, many details ought to be known to the expert, in addition to the precise condition of the injured eye, such as the age of the complainant, the nature of his work and the calls it makes on binocular vision, the wage received before, and if any after the accident, the date of the injury, and the presence or absence of ocular trouble in the uninjured eye. The expert must then draw on his experience to reply to the questions that are sure to be put to him; whether the injury is likely to be permanent, and if so, whether it will interfere with his wage-earning power by impairing the precision and speed with which, compared with his fellow workmen, he can follow his occupation.

In Switzerland, we are informed by M. Sulzer, a workman's Insurance Society was founded in 1876, but no fixed relations between diminution of visual acuity and the wage of the workman is recognized. A large proportion, which he estimates

at 95 per cent. of cases where some indemnity for the injury is claimed and given are arranged amicably. Of the remaining cases, some are settled by the magistrate without the intervention of experts; in others, the opinion of experts, and their awards, which are usually liberal, are accepted, though with possible modification by the Court. Haab and Pflüger, both Swiss, agree in their practice. They consider that loss of vision of one eye, corresponds to a loss of 25 per cent. in the higher class of artisans, and of 20 per cent. in the lower. When the eye has been removed they add 5 per cent., and although the reason is not clear, when an artificial eye is worn, they add another 3 per cent. In cases where the lens has been extracted, the higher class is awarded 18-20 per cent.; the lower 13-14 per cent.

(To be concluded.)

HENRY POWER.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—ANATOMY AND PHYSIOLOGY.

Paterson, J. V.—Some observations on the lymph flow through the eyeball in man and certain animals. *Journal of Pathology and Bacteriology*, March, 1904.

In spite of much contradictory evidence on this subject it is now usually held that (1) the main seat of secretion of the intra-ocular fluids is the ciliary body and the path to the anterior chamber is through the pupil; (2) in man the fluids are eliminated through the angle of the anterior chamber by way of the canal of Schlemm: there is in man very little flow by way of the nerve, although this is a most important path in the rabbit; (3) the anterior chamber is in more or less free communication with the canal of Schlemm and with the veins; and (4) it is probable that the iris plays some part in the absorption of fluids.

The first series of experiments **Paterson** undertook were for the purpose of observing the flow in rabbits. For this purpose he used albino animals, and injected a varying amount of Chinese ink into the vitreous. This caused no reaction during the time the animals remained alive, which was from 3 to 24 hours. The ink did not diffuse itself through the vitreous, but flowed backwards towards the papilla, while some of it spread round the posterior surface of the lens and would probably sooner or later have appeared in the anterior chamber. The time limit (24 hours) was insufficient to demonstrate this.

These experiments showed that the chief way in which fluid can get out of the eye in the rabbit is by way of the posterior channels.

The same experiment in dogs yielded results less uniform than in rabbits, due to the greater reaction set up by the operation. The tendency for the ink to pass backwards was not seen at all in this animal. It spreads itself more diffusely through the vitreous, and in every case passed forwards to a greater or less extent; it passed round the lens, through the hyaloid and zonule and finally through the pupil into the anterior chamber. It then tended to accumulate in the spaces of Fontana.

In the cat there was less tendency to reaction and the fluid passed in a manner almost identical with the dog.

In the monkey, the eye so closely resembles that of man that the experiments were of great interest. Unfortunately, however, these eyes greatly resented the presence of foreign matter in the vitreous and much reaction was set up, thus greatly interfering with the passage of fluid. The tendency of the ink to pass forwards was quite marked but only traces of it appeared in the anterior chamber within 24 hours. There was, however, a tendency for it to spread backwards towards the disc, though none was actually seen in the perivascular space round the central vessels of the optic nerve.

When ink was injected into the vitreous of a freshly enucleated rabbit's eye, it passed freely forwards into the anterior-chamber and escaped into the veins. There was free passage down the central canal of the nerve, but not into the nerve sheath. In the dog it passed forwards but none penetrated the optic nerve. In the monkey it appeared in the anterior chamber after 16 hours but only in small quantities; the iris was not stained as in the dog or at any rate to a much less extent. In sheep and pigs it readily passed from the vitreous into the anterior chamber.

When ink was injected into the anterior chamber of a healthy human eye, directly after excision, it passed with great rapidity into the veins, and an exquisite injection of the circum-corneal vessels was obtained. In this eye and in another the ink readily passed into the iris, and only the area occupied by the sphincter was free from colour.

In excised monkey's eyes much the same condition was found. In the dog the results were not so uniform. In the sheep, pig, and rabbit the ink did not pass into the iris from the anterior chamber, but easily passed into the veins.

Paterson next describes the apparatus he used to determine the rate of flow through the anterior chamber. He found that the average rate of flow in the rabbit was 3 ccm. per minute.

In the dog the rate of flow varied widely from 26 ccm. per minute to 6 ccm. In the cat the rate varied from 13 to 8 ccm. In the monkey the flow was about 7 ccm. per minute. In the sheep it was on an average about 26 per minute, and in the pig about 10.

These *post-mortem* experiments do not, however, give much idea of what is the rate of flow from the anterior chamber during life. If a canula be introduced into the anterior chamber during life and be put into communication with a column of fluid equivalent to the intra-ocular pressure, little or no fluid will be found to pass into the eye, but after death the ciliary secretion will be suspended and fluid will flow into the eye and leave by the ordinary channels.

Paterson then goes somewhat into the question of glaucoma. In cases of irido-cyclitis, the cause of the increased tension which is often present has been much discussed. He considers that it is due, not so much to the presence of an albuminous ciliary secretion, as to the blocking of the fine channels of escape at the filtration angle by inflammatory products. As there is never any difficulty in the passage of fluid at the edge of the lens, Paterson does not believe in Priestley Smith's theory that an increase in the size of the lens has anything to do with the production of glaucoma. The general and local vascular degeneration that is present so frequently in glaucoma patients has not been fully interpreted, nor has its full significance been recognised.

Some permanent difficulty to the passage of fluid into the veins must exist, but whether that difficulty is due to an obstruction between the anterior chamber and the veins, or merely to an increased blood pressure in the veins which prevents the flow of lymph into them, and thereby maintains an abnormally high intra-ocular tension, has not been definitely settled.

C. D. MARSHALL.

Noiszwski, K.—Purkinje's phenomenon and the adaptation of the retina. (*Das Purkinje'sche Phänomen und die Adaptation der Netzhaut.*) *Recueil des travaux X^e Congrès international d'Ophthalmologie*, Lucerne, septembre, 1904.

Noiszwski's researches revealed the interesting fact, that Purkinje's phenomenon—*viz.*, that in twilight blue objects appear lighter than red—is not dependent on a peculiar adaptation of the retina, but is due to the greater paucity of red rays in the atmosphere at dawn and dusk as compared with midday. By daylight the ratio in units of blue to red light is 256 : 1; at twilight it is found to be 2,560,000 : 1.

C. MARKUS.

Agagabow.—Nerves of the Sclera. *Archiv. f. Mikros. Anatomie*, März, 1904; and *Lancet*, July 16th, 1904.

Agagabow finds that the best way to display the nerves of the sclera is the injection *in vivo* of methylene blue solution containing from 1% to 3%, with subsequent removal of the eye from the body, evisceration of its contents, and careful section. By these means the nerve endings can be followed to their finest ramifications, and Agagabow has been able to distinguish sensory, trophic, and vaso-motor nerves; the last characterised by ganglion cells. The sensory nerves are to be found in all parts of the sclerotic. They are at once recognised by being medullated, although some lose their medullated sheath near their termination. These fibres are varicose and exceedingly delicate, and end in a nodule slightly larger than the varicosities. In some instances a terminal brush-like arrangement of varicose fibres is observable. When the nerve trunks cross vessels they may be sometimes seen to be flattened out, and appear to be as much as two-and-a-half times thicker than before or after crossing. This peculiarity (which may be seen in other parts of the body) has not received the attention that it deserves from histologists. The author gives illustrations showing the mode of termination of the sensory nerves. The vaso-motor nerves taken from the choroid are also shown, which exhibit the disposition of the ganglion cells both singly and in groups. Agagabow states finally that in many sections of the sclera taken from white cats and rabbits, finely granular nerve fibres may be seen which proceed from medullated nerve trunks and which form networks around endothelial cells.

Cosmettatos, G. F.—On the action of nicotine upon the superior cervical ganglion. (De l'action de la nicotine sur le ganglion cervical supérieur.) *Archives d'ophtalmologie*, juillet, 1904.

Cosmettatos' conclusions are as follows: (1) a solution of nicotine applied directly to the superior cervical ganglion of the rabbit paralyses at once and for a long period the nervous cells of the ganglion, without, as in other animals, first setting up a phase of excitation; (2) as a consequence of this paralysis there is a copious lacrymal secretion, contraction of the pupil, delayed blinking, and vaso-dilatation of the conjunctiva and of the external ear; (3) nicotine provokes a temporary chromatolysis of the ganglion cells; (4) the superior cervical ganglion possesses a tonus as regards the eye.

Chiari, C.—Upon the sclero-conjunctival glands of Manz. (Sulle ghiandole sclero-congiuntivali di Manz.) *Archivio di Ottalmologia*, Vol. 10 (1903), Fasc. 7-8, p. 270.

Chiari in the present communication studies the glomerular glands described by Manz in the calf and goat, and named by Kleinschmidt the sudoriferous glands of the conjunctiva. Stromeyer, Henle, and Waldeyer have described in man crypts of the mucous membrane in the region of the inferior cul-de-sac as being the representatives of the glands of Manz. However, they are more probably utricles from the glands of Krause or simple cysts formed by retraction of the conjunctiva.

A. ANTONELLI.

II.—PATHOLOGY.

Lopez and Piquero.—Muscular Sarcoma. (Sarcome musculaire.) *Recueil d'ophtalmologie*, XXV (1903), p. 589.

A child, aged two years, suffered from an orbital tumour, which had commenced two months previously as a small, red swelling of the upper eyelid. After an exploratory incision (which gave exit to no fluid), the tumour was extirpated without interfering with the eye. It was found, upon pathological examination, to consist mainly of striated muscular fibres, separated by an infiltration of round and fusiform embryonic cells. It was therefore diagnosed as a muscular sarcoma, and the authors suggest that it arose either from one of the motor muscles of the eye or else from the levator palpebræ superioris.

S. S.

Awerbach.—Actinomycosis of the lacrymal canaliculi. (Cribkowi srostki siesnich Kanaltsew.) *Rousski Wratsh*, No. 27, 1903, and *Revue générale d'ophtalmologie*, 31 octobre, 1904.

Awerbach has met with a case of actinomycosis of the lower lacrymal canaliculus. He gives in the present communication a detailed account—morphological, chemical, and bacteriological—of the characters of actinomycosis. According to the author, the cases of concretions in the canaliculi described by Desmarres and before him by Sandifort (1779) and Gesoin (1670) and by Græfe, as well as the cases of so-called leptothrix and of streptothrix published up to the year 1890 are identical with the cases now spoken of as instances of actinomycosis. In view of the rarity of the cases published in France, Awerbach enquires whether the affection is not localised more particularly to certain countries.

G. WEILL.

Seo, J., and Yamaguchi, H.—Pathological examination of keratitis fascicularis and pannus scrophulosus. (Pathologisch-anatomische Untersuchung von Keratitis fascicularis und Pannus scrophulosus.) *Klin. Monatsbl. f. Augenheilkunde*, 1903, Bd. I, p. 38.

Seo and Yamaguchi examined the eyes of a scrofulous child, aged 2½ years, who had succumbed to erysipelas and bronchitis. During life, one eye had presented a fascicular infiltration of the cornea with pannus and maculæ, and the other eye keratitis fascicularis. The eye-balls were examined after hardening in alcohol, serial celloidin sections being cut. The keratitis fascicularis had produced the following changes: destruction of Bowman's membrane and the anterior layers of the substantia propria, which were replaced by vascular connective tissue. The extremity of the infiltration came from below Bowman's membrane. The inference accordingly is that keratitis fascicularis extends beneath Bowman's membrane. A round-celled infiltration was further found in the deepest layers of the cornea, and this the authors account for on the supposition that the middle layers first freed themselves from the intruding cells. In the pannus were found deep infiltrations, vascularisation, and erosions of the under surface of Bowman's membrane. The question as to whether the changes described result from endogenous or exogenous infection is left open, although Seo and Yamaguchi seem to incline to the latter view.

A. BIRCH-HIRSCHFELD.

Bruns, Otto.—On the experimental production of seemingly-phlyctenular inflammation by dead tubercle-bacilli. (Ueber experimentelle Erzeugung phlyctaenenartiger Entzündungen durch abystötete Tuberkelbacillen.) *Von Graefe's Archiv f. Ophthalmologie*, Bd. iii. 58, 1 Juli, 1904.

Leber was the first to indicate the part which inactive tubercle-bacilli might take in the production of phlyctenular inflammation. **Bruns**, who, in pursuance of this idea, injects sterilised cultures of the bacillus into the cornea, is indeed successful in occasionally producing pannus and ulceration; still these changes are essentially different from anything seen in phlyctenular keratitis; but after introducing sterilised cultures into the arterial circulation, he sometimes meets with a very interesting nodular infiltration of the limbus, which, if not altogether identical, has indeed many macro- and microscopical peculiarities in common with genuine phlyctenular inflammation of this region.

R. GRUBER.

Gibson, Lockhart.—A case of right central hemianopsia, with word-blindness. *Australian Medical Gazette*, June, 1904.

Gibson's patient, a man aged 58 years, suffered from right homonymous hemianopsia, associated with word- but not with letter-blindness. His vision was reduced, apparently by vitreous opacities, to R. $\frac{6}{70}$ and L. $\frac{6}{15}$. He could write as well as his diminished sight would allow, but was unable to read what he had written. He died in March, 1904—3½ years after he was examined by Gibson. At the autopsy it was found that the posterior part of the mesial aspect of the left occipital lobe had disappeared by brown softening. The lesion extended beyond the centre of the calcarine fissure, and involved both its lips. It also included a part of the posterior portion of the lingual lobule and the posterior and upper parts of the cuneus.

J. W. BARRETT.

Demichieri.—Episcleral cyst in an atrophic eye. (Quiste episcleral un ojo atrofico por herida.) *Arch. de Oftal. Hispano-Americanos*, September, 1904, and *Anales de Oftalmologia*, October, 1904.

Cysts of the episcleral tissue and of the capsule of Tenon are among the rarities of ophthalmic surgery. All the cases hitherto recorded have been spontaneous, with one possible exception, namely, that of Sgrosso. Demichieri's case occurred in a man of 17 years, whose right eye had been destroyed by a wound some years before he sought advice. The cornea, reduced in all its dimensions, was flattened by a large scar, which crossed it from side to side. At the outer end of the scar was a cyst, 3 mm. or 4 mm. in diameter, with transparent walls. A year later the cyst measured 10 mm. in diameter. It was somewhat reniform in shape, and encircled the outer margin of the cornea. On account of the pain, it was decided to enucleate the eyeball. Microscopical examination of the cyst showed that its outer wall was made up of a layer of dense fibrous tissue more delicate than the sclera itself. This very vascular wall was covered throughout by two layers—the inner a layer of loose areolar tissue, and the outer, composed of stratified epithelium resembling the conjunctiva. The inner surface of this wall was covered by stratified epithelium. In all likelihood the cyst was due to implantation.

HAROLD GRIMSDALE.

Ischreyt, G.—On conjunctival cysts. (Ueber Konjunktivalcysten.) *Klin. Monatsbl. f. Augen.*, Februar, 1904, p. 132.

Ischreyt gives details of two cases: the cyst being differently

situated in each case. In the one it was embedded in connective tissue of the mucosa ; in the other, in the subepithelial layer of the smallest vessels. The excretory duct in the first case presented regular epithelium ; in the second case the epithelium was short and irregular, the conjunctival epithelium being proliferated and forming cones and minute glands. The author believes the cyst in the first case to have originated from a Krause's gland ; in the second case from epithelial proliferation or from a Henle's gland.

A. BIRCH-HIRSCHFELD.

Streiff, J. J.—On the development of glands in the optic nerve. (Ueber die Entstehung der Optikusdrusen.) *Klin. Monatsbl. f. Augen.*, Februar, 1904, p. 149.

Streiff reports five cases of glands in the optic nerve. He holds that the cause of their development is an alteration in the flow of lymph in the papilla, and that they must thus be regarded as a pathological sign, often as a consequence of papillitis.

A. BIRCH-HIRSCHFELD.

Werner, L.—Lymphoma of the conjunctiva. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 24.

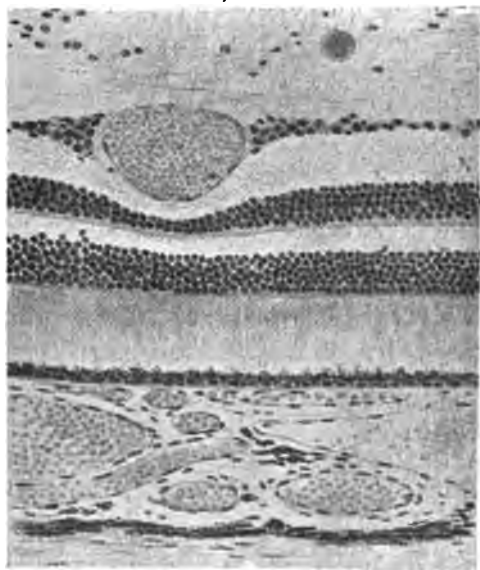
Werner gives an interesting description, clinical and pathological, of a case of lymphoma of the conjunctiva that he had an opportunity of seeing in a healthy woman, 25 years of age. The disease, which was not accompanied by pain, had been present for twelve months before the patient sought advice. Upon examination, **Werner** found a smooth, rounded fold of enormously thickened conjunctiva practically encircling the cornea. It was pale greyish-pink in colour, and gelatinous in appearance. The cushion-like mass was formed principally by the enlarged retro-tarsal folds. No glands were involved. The blood was not examined. The condition subsided after portions of the affected tissue had been removed. Material, stained with iodine and with methyl violet, failed to yield the amyloid reaction. Microscopical sections through the upper retro-tarsal fold showed thickening of the epithelium, and a dense infiltration of the deeper subepithelial tissues with small lymphoid cells. Vessels were few and far between ; they were, in fact, represented by a few scattered capillaries merely. No giant-cells ; no hyaline changes. **Werner** himself believes that his case represents the first stage of amyloid disease as described by **Kubli** (*Archiv f. Augenheilk.*, Bd. X, p. 430).

Pusey, Brown.—Corpora amylacea in the normal retina.

(Corpora Amylacea in der normalen Retina.) *Klin.*

Monatsbl. f. Augenheilkunde, Dezember, 1904, p. 561.

As everybody knows, corpora amylacea are often found in the central nervous system and optic nerves of elderly persons. These bodies, however, have not yet been met with in the normal retina. Whilst examining specimens in Professor Axenfeld's laboratory **Pusey** has recently come across a retina which showed them. The specimen was obtained from a female, aged 40 years, whose eyeball was removed on account of



a small circumpapillary sarcoma of the choroid. Histologically, the retina was normal. In the nerve-fibre layer Pusey found round and oval bodies present (*see figure*), which stained a dark blue with hæmatoxylin and eosin, and showed a concentric lamination, a finding rather rare in the amyloid bodies of the central nervous system. With van Gieson they took a pale-red colouration, and with iodine a yellow colour. Their size was three to four times that of a red blood corpuscle. They were encapsulated. The corpora amylacea, finally, had nothing whatever to do with the sarcoma.

S.S.

Buchanan, Leslie.—**Mycoses, with special reference to mycosis of the eyeball.** *Glasgow Medical Journal*, December, 1904.

Buchanan has a careful paper on mycosis, especially of the eyeball. It is illustrated with one photomicrograph from a cornea affected with the disease. It is admitted that a few only of the various members of the higher order of moulds are capable of growth and multiplication at the temperature of the human body. These include *aspergillus fumigatus*, *a. nigricans*, *a. flavescens*, *a. glaucus*, and *penicillium glaucus*. So far as the eye is concerned *aspergillus fumigatus* is the organism most commonly present, Buchanan has found records of twenty-one cases of ocular mycosis, besides a reference to one unrecorded case. Of the twenty-one cases, fourteen were reported from Germany, two from Scotland and the United States of America respectively, and one apiece from Russia, France, and Italy. The cornea has generally been the part affected, but in other instances the fungus has been found growing in the interior of the eye. It is likely that the mould is always conveyed to the eye by some agency directly or indirectly connected with the soil, as for example, earth itself, straws, fruit, cereals, and so forth. Leber's experiments have shown that suppurative inflammation can be produced by injecting the mould's spores into the cornea of the rabbit, a result confirmed by other observers. There is, further, this very important point, namely, that the inflammation is not the outcome of accidental contamination with pyogenic organisms. *Clinical appearances.*—The appearance of corneal mycosis is usually that of hypopyon-ulcer. The floor of the ulcer, however, has a sharply-defined edge, and is raised above the level of the surrounding cornea. The elevated surface is flat and looks greyish and dry. The raised area remains of almost constant size for a period of several weeks or even months. The hypopyon, an almost constant feature of the cases, varies in amount from day to day. There is generally considerable pain. In one or two cases the appearances have been exactly those of a fascicular keratitis. There is no tendency to extension, either local or general. *Treatment.*—The most efficacious means is to destroy or to remove the infected area. *Preparation of specimens.*—The best results were got by staining specimens deeply with Ehrlich's hæmatoxylin and neutralising freely with ammonia vapour. After washing specimens in water, this method yielded a good and lasting stain as regards the mycelium. Cultures may be made upon any medium at the usual incubation temperature, 37.5° C. S.S.

III.—AFFECTIONS OF TENON'S CAPSULE.

- (1) **Purtscher, O.**—A contribution to the study of suppurative Tenonitis. (*Beitrag zur Kenntniss der eitrigen Tenonitis.*) *Centralbl. für prak. Augenh.*, März, 1904.
- (2) **Bronner, Adolph.**—Case of acute primary abscess of Tenon's capsule, with perforation into the eyeball. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 209.

(1) **Purtscher** mentions some of the cases reported in literature and then describes his own, that of a type-setter, 21 years of age, who, three weeks before his admission to hospital, suffered from much pain in the head, diplopia, and impairment of vision in the right eye. He was not an alcoholic subject; no history of syphilis or of trauma. *Condition on admission*: Right eye normal externally, except for marked venous injection of the ocular conjunctiva. No ptosis, but the movements of the eyeball were markedly limited in all directions, especially up and out. Pupil reacted well and was of the same size as the left one. Orbital margins not tender, but dull pain on pressing the eyeball back into the orbit. Ophthalmoscopically: media clear; the edges of disc blurred, and considerable (2 D. to 3 D.) swelling of the disc; veins engorged; arteries normal. No limitation of field of vision. Left eye normal. The treatment adopted was mercury inunctions, potassium iodide, and pilocarpin. Two weeks after admission, pus appeared at the region of the insertion of the rectus internus. The condition remained stationary for about six weeks, pus appearing a second time at the same spot, when it began slowly to improve, until about four months later scarcely any evidence of the old trouble could be found, the movements of the eyeball and the disc being practically normal. The author considers the cause to have been a spreading inflammation from a carious tooth in the right upper jaw, from which the patient had suffered some months previously and which had been allowed to go on to the formation of a fistula. Purtscher thinks a periostitis was then set up, which later spread to the orbit. A. LEVY.

(2) The salient facts of **Bronner's** case of abscess of Tenon's capsule are as follows: a man, aged 21 years, complained of sudden pain in one eye, which next morning was prominent with swollen lids. Sight began to fail three days after pain was first experienced. On the seventh day, the lids were red and swollen, the eyeball was thrust forward, the ocular movements were limited, and the cornea was slightly hazy. An incision made below the eyeball gave exit

to a teaspoonful of non-offensive pus. Two days later the eyeball was removed. During the operation Tenon's capsule was found to be adherent, especially behind. A mass of tissue was present on the hinder part of the sclera, connecting Tenon's capsule and the eyeball, and in the centre of this was an opening into the globe. Bronner regards his case as one of primary abscess of Tenon's capsule, bursting into the eyeball and causing panophthalmitis.

IV.—OBSTETRICAL INJURIES TO THE EYE.

- (1) Sidler-Huguenin.—A contribution to the knowledge of birth injuries of the eyes. (*Beitrag zur Kenntnis der Geburtsverletzungen des Auges.*) *Correspondenz-Blatt f. Schweizer Aerzte*, 1903, Nr. 6.
- (2) Coburn, Edward B.—Hæmorrhages in the eye, present at birth. *Archives of Ophthalmology*, May, 1904.
- (3) Veasey, C. A.—Report of a case of congenital exophthalmos produced by orbital hæmorrhage followed by metastatic choroiditis. *Ophthalmic Record*, May, 1904.
- (4) Fejér, J.—Oedema of the Cornea in a newly-born child after forceps delivery. (*Oedem der Hornhaut—beim Neugeborenen—nach Zangen-Geburt.*) *Centralbl. für prak. Augenh.*, August, 1904.
- (5) Borland, Hugh Bowie.—A case of exophthalmos in the newly-born. *Lancet*, November 12, 1904.
- (6) Crawford, I.—A case of exophthalmos in the newly-born. *Lancet*, November 19, 1904.

(1) In the course of this interesting communication, which occupies sixteen pages of the *Correspondenz-Blatt*, Sidler-Huguenin, of Zürich, discusses the cases so far recorded of injuries to the eyes of the baby during birth, normal and instrumental, and reports seven new instances that have fallen under his notice. Of these latter, the main facts are as under :

Case No. 1.—The first child of a woman with normal pelvis showed after a non-instrumental labour, lasting fifteen hours, a right-sided facial paralysis. Three weeks later, lagophthalmos and ulcer of the cornea. *Case No. 2.*—A first child was delivered with forceps after a labour lasting sixty-four hours. Soon after birth, both corneæ became opaque. When seen by Sidler-Huguenin, the pupils were active, tension was normal, and there were bulbar hæmorrhages. The surface of the cornea was intact, but both corneæ were diffusely cloudy.

Three days later the corneæ had cleared enough to allow an examination of the fundus to be made. Tension was then minus. The diffuse corneal opacity had been replaced by the ninth day by linear opacities, three in one eye and two in the other. Eventually the corneæ cleared completely. *Case No. 3.*—A male child was delivered, apparently asphyxiated, after two applications of the forceps. After recovery it was noticed that the left facialis was paretic and the lids of the right eye were much swollen. Child examined by Sidler-Huguenin when three days old. The paresis had then passed away. There was conjunctival ecchymosis in both eyes. The right cornea was milky, opaque, and finely stippled, and the temporal third of the iris could not be seen through the cloudy medium. The cornea looked, indeed, as if it had been cauterised. The left cornea manifested slighter changes. Corneal surface intact. The right anterior chamber, deeper than that of the other side, contained liquid blood. The cranium showed some deformities due to compression; abrasions of the scalp existed. The right cornea cleared enough in four days to allow retinal hæmorrhages to be recognised in the fundus. After a further five days, the left cornea had become almost normal, while the right cornea was somewhat clearer. Hyphæma had disappeared but hæmorrhages were still visible in the fundus. Child discharged after eleven days stay in hospital, with some obliquely placed linear stripes on the right cornea. When the child was examined at $4\frac{1}{2}$ years of age, the corneæ were clear, fundi normal, and pupils equal and active. There was no squint and sight seemed to be normal. *Case No. 4.*—A child (believed to be asphyxiated) was born after the artificial induction of labour in the thirty-fifth week of pregnancy. The head becoming jammed in the pelvis, the true conjugate of which was 7.5 cm., forceps were applied. An opacity of each cornea was noticed as soon as the baby was born. On the following day, Sidler-Huguenin found excoriations and ecchymoses about the scalp and one ear, while both the corneæ were uniformly opaque, without epithelial defects. Two days later there was ecchymosis of the right upper lid, and indications of a linear opacity in the right cornea. No hyphæma. Ten days after birth, the corneæ had cleared so much that the iris could be seen, a thing previously impossible. Several horizontal lines were present towards the centre of the right cornea, while some vertical opaque stripes existed in the left cornea. Eighteen days after birth, a broad white stripe lay in the depths of each cornea, its direction being horizontal in the right and vertical in the left cornea. Fifty-eight days after birth, the corneal stripes were found to be much less conspicuous, and there were no changes in the fundi. *Case No. 5.*—A woman,

aged 49 years, stated that one of her eyes had been dislocated and blinded at birth. Sidler-Huguenin found the corresponding optic papilla atrophic, and the retinal arteries and veins, especially the former, abnormally narrow. There was, further, macular disease, and the eye squinted. *Case No. 6.*—A child, aged 1 year, was stated to have squinted for more than three months. There was history of a difficult forceps delivery, and scars, made by the blades of the instrument, remained on the right temple and behind the left ear. Baby thought to be dead when born, but it revived during the bath. Sidler-Huguenin found nystagmus and convergence of the right eye, although an abducens paralysis could not be demonstrated. There was marked atrophic disturbance of the right disc, and less pronounced changes of a similar kind of the left disc. *Case No. 7.*—A girl, aged $3\frac{1}{2}$ years, was brought to Sidler-Huguenin on account of infantile glaucoma affecting the right eye, on the cornea of which were several typical band-formed opacities. Tension raised (+ 1); papilla pale and cupped. The baby had been delivered with forceps, and the lids of the affected eye had been much swollen and ecchymosed after birth. S.S.

(2) Coburn undertook this investigation to ascertain, if possible, the reason for poor vision in eyes which have no appreciable changes in the fundus commensurate with such diminution of sight. Having had the opportunity to examine a number of infants, "the unnatural behaviour of whose eyes had attracted the parents' attention," he observed, either alone or in combination, some of the following conditions: peculiar retinal pigmentation; diminution in the size of the retinal vessels; pallor of the disc; feeble iris reflexes, with pupils sometimes large, and with nystagmic movements of the eyes. These changes appearing at such an early age, it seemed necessary to seek for the cause before or during childbirth. Previous investigations in this line have been made, but insufficient details have been recorded to enable a proper estimate to be made of the causes of the changes.

Coburn's studies were conducted in the Laboratory of the College of Physicians and Surgeons, New York City, and the eyes of 37 infants were examined. The infants were either still-born or had lived not longer than twenty-two days. On dividing the eyes, it was often possible to see the hæmorrhages with the unaided eye or by transmitted light. Contrary to the investigations of others, most of the hæmorrhages were found in the equatorial part of the eye up to the ora serrata, the posterior portion, in particular the macular region, presenting fewer extravasations. Detachment of the retina

in the usual papillo-macular fold was generally observed. Coburn considers it worthy to note that fully four-fifths of the eyes examined showed engorged vessels even where there had been no extravasation, and this natural injection of the vessels and capillaries of the retina proves that the retina is not so sparsely supplied with blood-vessels as is ordinarily supposed. The retina was the chief site of the extravasation in the seventeen cases in which hæmorrhage was found. Hæmorrhages were most frequently found in the inner layers of the retina, especially in the nerve fibre and contiguous layers. The subhyaloid hæmorrhages were usually massive, and had occurred as the result of rupture of the blood vessels lying close to, or on the inner surface of, the retina. The author believes that the disrupting effect of these hæmorrhages is another proof of the rupture theory, as large cavities entirely filled with blood were seen wherein no signs of retinal elements were observed. The frequency of retinal hæmorrhage is remarkable, and somewhat difficult to explain when contrasted with the infrequency of choroidal hæmorrhage and the vascularity of that membrane. The free anastomosis of the choroidal vessels, compared with the terminal arteries of the retina with their lack of intercommunication should not be forgotten.

Coburn, in conclusion, suggests that the probable cause of retinal hæmorrhage is a disturbance of the retinal circulation, resulting from compression of the optic nerve and its central blood-vessels. This, he says, is due to a distension of the optic nerve sheath with cerebro-spinal fluid from compression of the head occurring at birth; this same cerebro-spinal fluid returning to the cerebral lymph spaces after birth leaving practically no trace of its former presence, except its secondary effect in producing retinal hæmorrhage. The occasional finding of a few blood corpuscles stranded in the sheath of the optic nerve is partial evidence of the truth of this statement. Coburn also states that the coloured race and persons of a hæmorrhagic diathesis (*sic*) are most susceptible to this form of traumatism.

JOSEPHINE W. HILDRUP.

(3) A curious case of exophthalmos in a newly-born baby is reported by **Veasey**. The facts are as follows. A male infant was born after an exceedingly short labour, without instrumental aid of any kind. The left eye appeared to be considerably larger than the right, and during the next forty-eight hours the proptosis had increased so much that the eye could not be covered by the lids. That portion of the cornea left exposed was dry and stippled. The protrusion was directly forwards, and the eyeball was absolutely fixed. On the third day hæmorrhage occurred from the conjunctivæ.

and mucous membrane of the mouth, and on the following day there were numerous hæmorrhages beneath the skin all over the body and limbs. The blood was dark in colour and coagulated quickly. Hæmoglobin was 92% of the normal; red corpuscles numbered 5,120,000, and white, 11,600. Urine practically normal. Baby well formed, of good size, and in excellent health. Despite treatment, exophthalmos continued to increase, and the cornea became more opaque and the conjunctiva tumid. No hæmorrhages were observed after the sixth day, but on the eleventh day, the eyelids covered only the posterior half of the globe, pus was present in the anterior chamber, and the pupil presented a greyish reflex. Next day exophthalmos had increased, the other symptoms were worse, and the baby was evidently in great pain. The eye was enucleated. A large clot was present behind the globe. Upon opening the eyeball, pus was found in the iris, ciliary body, and choroid. Veasey accounts for the state of the uveal tract by assuming that it had been infected by an embolus from the umbilicus, concerning the condition of which no information is vouchsafed by the author.

Fejér reports a case of ground-glass opacity of the cornea in a child born under the following conditions:—rupture of membranes 24 hours after onset of pains; five hours later, there being no progress in spite of pains, forceps were applied, and the child delivered. After birth the surroundings of the left eye and the lids were swollen, and there were several small hæmatomata. The opacity of the cornea was noticed on the second day, when it was seen to resemble ground-glass, although the brightness of the surface was not impaired. No sign of any injury. Under hot applications, the condition began to improve at once, and by the eighth day the cornea was quite clear again. The condition was most probably caused by the pressure of one blade of the forceps lying over the eye, thus bringing about an oedema between the lamellæ of the cornea.

A. LEVY.

(5) An infant, born after a natural labour lasting 14½ hours, presented apnœa, flattening of the cranial vault, and bilateral exophthalmos. The patient was the seventh child. Forceps were not used. There was no pelvic deformity, and the presentation was cranial. Some hours after birth, an effusion of blood was noticed under the conjunctiva of the right eye, which on the next day was found to project downwards and forwards, "evidence of what seemed an undoubted paralysis of the superior rectus muscle," according to the description of the case given by Borland. On the fifth day the child made a feeble effort to raise the eyeball, and two days later the movements were more pronounced, "indicative

of the paralysis passing off as the effusion became absorbed," to quote the author once again. Exophthalmos had disappeared on the tenth day, and the sub-conjunctival hæmorrhage on the following day. On the thirteenth day the two eyes looked almost equal. On the eighteenth day a slight internal squint of the affected eye was noted, and next day a clot of coagulated blood came from the right nostril. "Three weeks after birth there was still seen a slight degree of paralysis of the superior rectus, but this was only occasionally apparent." The child, now three years of age, is strong and healthy.

(6) **Crawford** met with marked exophthalmos of one eye in an infant, following a natural labour. The eye slowly resumed its proper position, with apparently no evil results as regards sight.

V.—MYOPIA AND ITS TREATMENT.

- (1) **Sattler, H.**—Principles of the treatment of Myopia. (Ueber die Grundsätze bei der Behandlung der Kurzsichtigkeit.) *Deutsche Med. Wochenschr.*, 1904, Nr. 17 u. 18.
- (2) **Wölflin, Ernst.**—The present status of the surgical treatment of Myopia. (Zum gegenwärtigen Stand der Myopieoperation.) *Correspondenz-Blatt f. Schweizer Aerzte*, March 15, 1904.
- (3) **Lagrange, Felix.**—Treatment of high myopia by extraction of the transparent lens. Late results. (Traitement de la myopia forte par l'extraction du cristallin transparent. Resultats éloignés.) *Annales d'oculistique*, T. CXXXII, p. 241, October, 1904.
- (4) **Frost, W. Adams.**—The operative treatment of high Myopia. *Brit. Med. Journal*, November 12, 1904.

¶ (1) This paper embodies the result of **Sattler's** exceptionally wide experience of myopia. On account of the great practical interest of the subject it will appeal to a large number of readers both in Germany and abroad.

The first part of the communication gives the views of various authors in different countries. Stress is laid upon the excellent paper by **Priestley Smith**. Some authorities recommend the full correction by glasses of the low and medium degrees of myopia. Others take a directly contrary view, or consider that complete correction is unnecessary, or that it is incapable of arresting the progress of myopia. **Sattler** was convinced by **Foerster** nearly twenty years ago of the advisability of complete correction. He has

since consistently adopted this course in slight and medium myopia in a large number of patients, always with the best results. In most instances, the myopia became stationary after the first correction, but in some cases a second or even a third correction in the course of a year or two was necessary to bring about the same result. As a rule, patients became accustomed to the correction within a few days. Sattler recommends complete correction of myopia of 0.75 D. for long and short distances. It is important to observe a reading distance of from 30 cm. to 40 cm. In many cases Kaltmann's straight-holder and Muller's shutter spectacles* were found to be useful. In patients below the age of 25 years the full correction of myopia up to 10 D. is usually tolerated well (good vision pre-supposed). Above that age myopia of from 5 D. to 6 D. can be corrected. If a high degree of dynamic divergence be present (*circa* 6°—8° on the Maddox scale at a distance of 5 metres: 16° to 20° at a distance of 25 cm.), Sattler recommends a cautious tenotomy of the external rectus muscle. The muscle is fixed by a suture, which can easily be tied if the operation produces an over-effect. For the higher degrees of myopia—say, 14 D.—the best results are obtained by removal of the crystalline lens. In this way Sattler has operated upon some hundreds of cases. He never adopts simple discission. On the contrary, he opens the anterior capsule with a small, sharp hook, having first incised the cornea with a Weber's lance-knife. He then removes as much as possible of the substance of the lens by slight pressure with the fixation forceps. This operation is often adequate. In the opposite event, good vision may be obtained by a discission performed after the lapse of a few weeks. As a rule, sight is better after the operation than it was before—of course, with suitable correction. The employment of weak convex glasses for close work causes the patient no inconvenience. In the absence of special reasons to the contrary, Sattler recommends that both eyes should be treated surgically. In this way the advantages of binocular vision are secured. According to Sattler, the danger of detachment of the retina is not increased by the operation. The perusal of Sattler's important communication in the original is recommended to all ophthalmic surgeons.

A. BIRCH-HIRSCHFELD.

(2) **Wöllflin**, of Basle, has an elaborate paper in the present status of Fukala's operation, in the course of which he collates the views of many of the most distinguished Continental ophthalmic surgeons. These are grouped under the several heads of 1.—Indications for Operation; 2.—Methods

*A contrivance by which a shutter falls across the glasses in case the patient stoops beyond a certain angle.

of Operating ; 3.—Dangers of Operation ; and 4.—Effects of Operation. These items may be considered one by one.

(1) *Indications for Operation.*—The average number of diopters at present taken as the lowest limit for operation is 14, the myopia being measured by correcting glasses at a distance of 1 cm. from the apex of the cornea. With regard to the existence of macular changes and choroiditis, there is some divergence of opinion. For example, if well-marked macular changes exist, Fuchs does not operate ; Gelpke regards such changes, which fail to improve under treatment, as a "relative indication" for operation. Uhthoff recognises no contra-indication to operation in recent changes. Fuchs does not resort to operation in patients over 40 years of age, while Silex asserts that to him all ages are alike, since the lens shows no sclerosis of the nucleus. v. Hippel, senior, has subdued myopia at the age of 70 years by simple dissection. As to the condition of the other eye, Fuchs operates only if the second eye is useful, whereas Silex will not operate if one eye is useful or if the other eye is destroyed from any cause. Occupations that forbid the wearing of spectacles negative the operation. Silex, Schmidt-Rimpler, and Gelpke operate if the patient is hindered in his work and cannot tolerate correcting glasses. Certain authors exact a minimum visual acuity before consenting to operate—e.g., Fukala favours 1/10, and Schweigger 5/36 central vision. The question whether the operation prevents the spread of pathological processes is a difficult one to answer. It is a fact that after many of the operations a decidedly favourable influence upon any choroiditis can be demonstrated, but it cannot be proved to be directly due to surgical measures. Fuchs, who, although an advocate of the operation, is one of the most cautious in its employment, is in the habit of warning his patients that operation is not free from all danger ; that it is not absolutely necessary for the preservation of sight ; that the eye may need to be used sparingly afterwards ; and that it affords no security against changes which occur in later years as a result of myopia—as, for example, atrophic processes in the choroid, retinal hæmorrhage, detachment, etc.

(2) *Methods of Operating.*—Bowman's needle is employed by some operators, and a small knife by others. A simple horizontal division of the anterior lens capsule is apt to entail a closing of the wound. The cross-cut has also been discredited on account of the fear that a corner of the lens capsule may become entangled in the wound, thereby leading to delayed healing and to prolapse of the iris. Axenfeld, following Pflüger's example, advises that the needle should be entered subconjunctivally instead of through the cornea, since he

believes that in that way the danger of infection is lessened. If after the primary dissection the solution of the lens leaves anything to be desired, Fröhlich recommends massage of the cornea by means of a glass rod. If this be not successful a second dissection is indicated. If glaucomatous symptoms supervene from the unduly rapid solution of the lens-matter the latter must be evacuated. Fröhlich warns us against premature evacuation of the lens-matter, that is to say, when ciliary injection only and no signs of glaucoma are present. By the systematic and energetic use of atropine danger may generally be avoided in such cases.

(3) *Dangers of Operation.*—The dangers of the operation for high myopia are three in number, *viz.*: (a) detachment of the retina; (b) increased tension; and (c) infection. At first statistics seemed to show a higher percentage of retinal detachment in non-operated eyes. But later figures, based upon a more correct basis for comparison, show an increase amounting to 2 % in eyes that have been treated surgically. The frequency of this complication is directly proportional to the age of the patient. Fröhlich found detachment in 1.25 % of the cases up to the age of 30 years, while in cases that had been operated on the figure was 3.3 %. v. Hippel, however, finds detachment in 4.3 % of the non-operative cases as compared with 4.1 % in cases that have been needled. Trustworthy statistics will be forthcoming only when the advocates of unilateral operation compare the two eyes of the same person with regard to the occurrence of retinal detachment. Another important question is, up to what time can detachment of the retina occurring after operation be attributed to the latter as a cause? v. Hippel thinks that detachments within the first year, occurring without obvious cause, must be put down to the influence of the operation. Sillex attributed a detachment three to four months after surgical interference to the operation. Axenfeld believes that detachments may occur after years; while Gelpke limits the possibility to two years.

Increase of tension after Fukala's operation is seldom met with. Cases of glaucoma, without plausible cause, are rare. Knapp (New York) attributes glaucoma in a number of cases directly to the operation. Zimmermann mentions an interesting case in a boy, 14 years of age, in whom after repeated dissections, there was an increase of tension, which did not yield to iridectomy and the use of myotics. Large doses of potassium iodide (such as Pagenstecher uses) overcame the symptoms.

Last year's statistics show that, contrary to former opinion, infection occurs in 2.5 % of the cases—*i.e.*, a higher percentage

than after ordinary cataract extraction. This may be partly due to the frequent necessity for a post-cataractal operation, due, in Hertel's opinion, to two facts: (1) the patients are mostly young, and the capsule of the lens shows normal proliferating activity; and (2) the entire capsule remains behind. This unfavourable issue will be less frequent if in the future operative interference is reduced to a minimum. It is on this account that Gelpke endeavours to content himself with one needling only in operating for high myopia.

Opinions differ as to whether one or both eyes should be subjected to operation. Axenfeld, once an advocate of the latter, is now converted to the former practice, although the 44 cases he has operated on show no single example of retinal detachment. Uhthoff and Pflüger also favour operation upon one eye. Schmidt-Rimpler takes an intermediate standpoint. That surgeon operates on the second eye only when the result of the first operation has lasted for at least a year, and only then provided no cystoid cicatrix or retinal detachment has supervened. According to his views, the great advantage of the double operation is that sight is then so good that even binocular vision is perfect, and, further, that it better prevents increase of the myopia. The superiority of the single operation, on the other hand, lies in the fact that glasses are not necessary, inasmuch as one eye can be used for distance and the other for near objects.

4. *Improvement of Vision by the Operation.*—A report from Haab's clinic gives a 2 to $2\frac{1}{2}$ -fold increase. Velhagen has found a 4 to 5-fold increase in some cases. Gelpke states that a 3-fold increase may be obtained. For the determination of this point near vision must be tested, since if correcting glasses are used, the diminishing co-efficient, which every concave glass possesses, may create a false basis for comparison. The cause of the improvement is attributed by Schmidt-Rimpler in many cases to the loss of lenticular astigmatism and turbidity, not uncommon occurrences in cases of high myopia. Leber gives to an increased retinal function some share in the improvement, while certainly the larger retinal images obtained after removal of the lens are not without influence upon the result.

5. *Conclusion.*—Final judgment on the operation for high myopia cannot yet be given. Before that can be done, there must be more time for observation and further information with regard to the connection between operation and detachments of the retina. It is also not yet determined if operation checks the progress of myopia and if macular changes furnish an indication or a contra-indication for its performance. One thing is certain, namely, that most ophthalmic surgeons

recommend operation under certain conditions. The number of those at present opposed to the operation will doubtless diminish when more precise indications and improved *technique* justify a better prognosis. R. F.

(3) **Lagrange** quotes short histories of twenty myopia operations. The method employed was the ordinary one of discission, followed by linear extraction. The lenses of both eyes were removed from two patients, but in the remaining sixteen cases only the more myopic eyes were dealt with. In all the cases good results were obtained, the visual improvement, which the author considers to be entirely due to optical causes, being, as a rule, from two-fold to three-fold. The diminution in the total refraction varied between 19 and 28 dioptries. The author considers that this variation is due to inaccuracy in the estimation of the myopia present before operation owing to the correcting lenses being held nearer to the cornea in some cases than others. Although grave choroido-retinal lesions were present in all the cases, these were not increased in any instance as a result of the operation. Eighteen of the patients were examined at intervals ranging from one to seven years after their operations and although, several of them were young, the myopia had not increased in any of them. The author considers this good result to be largely due to the fact that when only one eye was operated on binocular vision and all efforts of convergence were suppressed. There was no case of detached retina observed in the series. R. J. COULTER.

(4) **Frost's** aim in suppressing the crystalline lens in cases of high myopia is to enable the patient to go about without glasses. He has operated in this way upon 39 eyes in 35 patients. In order to obtain the best results, cases must be carefully selected. The chief factors to be considered in this respect are: (1) Degree of myopia; (2) Visual acuity; and (3) Age, Occupation, and General condition of the patient.

1. *The Degree of Myopia*.—The operation should not be undertaken unless the amount of myopia amounts to 15 D. or more. Otherwise stated, the operation is likely to be of small benefit if the resulting ametropia exceeds 4 D. Frost points out that the optical effect of removing the lens will be found to increase with the degree of myopia, a seeming anomaly of which he gives a very lucid explanation.

2. *Visual Acuity*.—Frost takes the ability to read No. 1 on Jaeger's types at the patient's far-point as a guide to the soundness of the retinal elements at the macula. This rough test he has found to be useful in practice. "The improvement," he writes, "in the visual acuity after operation is often considerable; in many instances in which corrected

vision was only $6/24$ or even $6/36$ before operation, it has been improved to $6/12$ or $6/9$. This fact may be held by some to justify operation on cases with a lower grade of myopia than I have indicated as the limit. I suppose that the improvement can only be due to increased size of the retinal image."

3. *Age, Occupation, and General Condition.*—Operation, Frost thinks, is usually called for only in young adults. The most suitable subjects are those who have just left school with the intention of embarking upon a career. By wearing conspicuous glasses they are handicapped in obtaining employment, and are debarred from many occupations by that fact alone. With regard to elderly people, they have usually become accustomed to the inconvenience of wearing glasses.

4. *Detachment of the Retina.*—The final position of Fukala's operation must stand or fall by its influence or otherwise in predisposing to detachment of the retina. Does the operation predispose to this complication? This is a question difficult or impossible to answer at the present time. "On the whole," says Frost, "I have a suspicion, not yet amounting to proof, that the operation increases the liability to detachment." "The benefit to the patient," he continues, "in many cases is, however, so great that this risk may be justifiable."

5. *Should one or both Eyes be Operated on?*—As the subjects of high myopia never have binocular vision, this factor need not be considered. If the amount of myopia be different in the two eyes (as is usually the case) it is evident that the better eye will be used to the exclusion of its fellow. Operation on the second eye, moreover, deprives the patient of one advantage, namely, the ability to recognise near objects without the aid of glasses.

S. S.

REVIEWS.

A BLIND MAN TO THE BLIND.

"The Blind Man's World" (Dr. Emile Javal's "Entre Aveugles.") Translated by W. ERNEST THOMSON, M.A., M.D., London: George Pulman & Sons, Ltd. Price 3/-.

Here is a little book which should be in the hands of the intelligent blind and in the hands of all who have the care of the blind. It has been widely read, we believe, in France, a German edition is in course of publication, and Dr. Ernest Thomson may be congratulated upon the admirable version in English which lies before us. "Having become blind suddenly, at a comparatively advanced age," Dr. Javal went resolutely to work to learn in what manner he could best

make life endurable. He has succeeded, we feel sure, in making it not merely endurable but useful, and even happy. He strikes and sustains an eminently cheerful note; and he insists throughout that the active man, smitten with blindness, is in no way condemned to idleness. Most grievous among the consequences of this affliction is, no doubt, the loss of liberty; but, as Dr. Javal shows, the sacrifice of that inestimable boon need never be absolute. Then, too, there are compensations. Dr. Javal does not indeed admit that blindness is accompanied by an increased acuteness of hearing, touch, and smell; but he maintains that there is "a greater cleverness in interpreting information furnished by these senses." The blind man, in guiding himself, uses every sense except sight, and this he may in some degree replace by that wonderful sixth sense (if so it may be called) which enables him to recognise the presence of objects. Among many blind persons the development of this perceptive faculty, which at present lacks a definite name, is nothing less than extraordinary. Mr. Hanks Lévy, walking with a friend in Forest Lane, Stratford, said, pointing to a fence which separated the road from a field, "Those rails are not quite as high as my shoulder."

"He looked at them, and said that they were higher. We, however, measured and found them about three inches lower than my shoulder. At the time of making this observation I was about four feet from the rails. Certainly in this instance facial perception was more accurate than sight."

So far as it be possible, says Dr. Javal bravely, let the adult blind continue their vocations. Let them determine never to be beaten. He quotes in this connection a very interesting letter from M. Riggenbach, the blind Professor of Theology at the University of Bale:—

"I am convinced," writes M. Riggenbach, "that when an adult becomes blind he should, if at all possible, continue his profession, and not allow himself to be discouraged by initial difficulties. If it be imperative that he make a change, let him choose an occupation which imposes definite duties, and does not offer any opportunity for working or idling as may happen to suit his mood."

"In spite of everything, the blind may have quite a pleasant and enviable lot. Personally, I am quite satisfied, having been able to pursue my studies, notwithstanding my infirmity, and having obtained a University chair."

Dr. Javal tells us, and we note this with satisfaction, that most of the intelligent blind with whom he has had to do, have made up their minds to learn Esperanto. Among the many artificial languages in the market at the present day—from Pidgin English to the Blue Language of Léon Bollak—Dr. Zamenhof's invention is incomparably the best; and Dr. Javal believes that it will prove of much greater use to the blind than to the sighted. This we may venture to question; for if Esperanto were made the international language it would serve travellers of all nationalities in all the countries

of Europe, the man of science in his laboratory and the merchant in his counting-house. But that Esperanto would be of immense value to the blind we do not for a moment dispute. Does Braille really do much for them? Will it ever do much for them? Dr. Javal's emphatic statement is that "in any one country the total possible sale of books published in Braille is too small to cover the cost of production."

Dr. Thomson's translation reads so well that we need not hesitate, perhaps, to glance at a rather awkward and perplexed construction in the very first sentence of the preface. What Dr. Thomson meant to say was, not that "any remarks . . . are hardly necessary," but that "few remarks are necessary."

De la Conjonctivite Granuleuse. Par le Dr. Z. HOURMOUZIADÈS, aide de clinique ophtalmologique a l'hospice National des Quinze vings; avec préface par le Dr. A. TROUSSEAU, médecin de la clinique nationale ophtalmologique des quinze vings. Paris: Société d'éditions scientifiques and littéraires, 4, Rue Antoine, Dubois, 1902.

Dr. Hourmouziadès has endeavoured to collect in this monograph all the important facts which are known about granular conjunctivitis and its treatment. Commencing with a description of the anatomy and histology of the normal conjunctiva, he goes on to give good accounts of the pathology, symptoms, course, and consequences of trachoma, the question of its connection with military ophthalmia being fully discussed. The aetiology of the disease is treated at length from the clinical standpoint, much stress being laid on the influence of general health and environment, although it is admitted that the ultimate cause is in all probability a microbe which has yet to be identified. Finally, a very extensive account is given of the various methods of treatment, both medical and surgical, of the disease and its complications. The book does not pretend to add anything to our knowledge of trachoma, but, nevertheless, includes a readable, practical, and sufficient account of a most troublesome disease.

Transactions of the Ophthalmological Society of the United Kingdom, Vol. XXIV, Session 1903-4. London: J. and A. CHURCHILL, 7, Great Marlborough Street, W., 1904. Price 12s. 6d.

The twenty-fourth volume issued by the Ophthalmological Society of the United Kingdom was distributed to members towards the end of November, 1904. It fully maintains the excellence of its predecessors. It contains, as usual, a large number of communications, some of sterling value and almost all of more or less interest. The usual lithographic plates are

this year replaced by beautiful reproductions in the new tri-colour process, which compare very favourably with their forerunners. The text illustrations reach a good standard of modern press-work. The *Transactions* include three important reports, namely, one upon the Edward Nettleship Prize, a second upon the vexed question of sight-testing by spectacle makers, and the third upon colour-vision. These have all received attention in THE OPHTHALMOSCOPE.

Strabismus, or Squint ; Latent and Fixed. A Supplement to the Errors of Refraction. By FRANCIS VALK, M.D., New York : G. P. Putnam's Sons, New York and London ; The Knickerbocker Press, 1904. Large 8 vo., pp. 169.

VALK, whose work in muscular imbalance has attracted so much favourable attention, has given us in this volume the main theories and views which he has found to be the most useful in a careful study of his cases of disturbed motility of the eyes. His personal experience in this direction, which for the past decade has been very great, has been set forth in a manner which is both original and valuable. Starting with beliefs "that the action of the ocular muscles in their relation to the other, in reference to the fusion power of the eyes and the physiological processes that govern their movements is not fully understood," and that "there must be one underlying cause (of squint), even though we may have so many contributing causes," he assumes that "when we do locate this cause" "we may find a reason for all cases of strabismus or functional deviation of the visual lines : not a cause (he says) that will cover some of the cases, but one that will cover all and every case." The arguments in favour of these beliefs are considered in many interesting and instructive ways.

C.A.O.

NOTES AND ECHOES.

The
Ophthalmoscope.

WE have much pleasure in announcing that the next number of THE OPHTHALMOSCOPE will contain communications upon the electro-magnet by Professors Hirschberg, Haab, and Snell. We congratulate ourselves and our readers upon having secured articles by these three authorities, all of them pioneers in the work of extracting metallic particles from the eyeball by means of the magnet. The number will in other ways be of exceptional interest, both from a scientific and a practical point of view.

**Annals
of
Ophthalmology.** IN noticing the advent of the new eye journal, *Ophthalmology*, the other day, our contemporary, the *Lancet*, fell into a curious mistake, announcing, with all the appearance of authority, that the *Annals of Ophthalmology* had ceased to exist. The *Lancet* will have to make peace with the editor of the *Annals*, which will doubtless prove an easy task in these days of international amity. Readers, of course, need scarcely be reminded that the *Annals of Ophthalmology* is still very much in the land of the living, although it is now edited by Dr. James Moores Ball instead of by Dr. H. V. Würdemann, who is in supreme control of the newer production. It is worth while noticing that the public have lost nothing by the divergence of opinion that arose as to the publication department of the *Annals*, since instead of one good journal they have now gained two.

* * * *

Alien Immigration. WHATEVER may be thought about the principles involved in the defunct Aliens Immigration Bill (and there is room for difference of opinion), there can be no question that we should be in a position to keep infectious immigrants from landing on these shores. Prominent among the diseases imported by these downtrodden children of misery stands trachoma, a malady that bears eloquent testimony to the miserable conditions which surround the Russian Jew in the country whence he comes. In England, at all events, the trachoma scourge is at present confined to the very poor and to those in close contact with them, as doctors and nurses, and to institutions, as some orphanages and most Poor-Law schools, recruited from that class. Every ophthalmic hospital in London has latterly become painfully familiar with alien trachoma, mainly in those of the Jewish faith from Russia, Poland, Germany, Lithuania, Austria, Roumania, and from some other parts of Eastern Europe. They come to the eye hospitals to find out, often through an interpreter, whether they are likely to be permitted to land in the United States, where strict exclusive laws are in force to prevent all persons "suffering from a loathsome or dangerous contagious disease" from entering the country. In spite of all precautions, however, as already pointed out in THE OPHTHALMOSCOPE, the public schools

of New York contain so much trachoma that the authorities have been compelled to take special steps in order to cope with the malady. Indeed, the States seem to have awakened rather late in the day to the advantages of excluding the trachomatous immigrant from the land of the Stars and Stripes. This is the more curious since as long ago as 1847 an Act was passed by the Legislature, mainly with the view of preventing the entrance of diseased or infirm aliens. So serious may become the result of the unrestrained admission of that class into the United Kingdom, that an official inquiry should be forthwith undertaken for the purpose of ascertaining exactly how matters stand. The Government should find out what proportion of those seeking admission suffer from contagious eye disease, and what steps should be adopted to protect our long-suffering citizens from the consequences of their ill-advised and indiscriminate hospitality. In the case of trachoma, prevention is a thousand times better and cheaper than cure. Anybody acquainted with the facts would hesitate to accept the optimistic view of the Royal Commission on Alien Immigration (1903) to the effect that trachoma "did not exist to an exceptional extent amongst the alien children." As a perusal of the Report and appendices will show, that conclusion was based upon the slenderest evidence.

* * * *

Fournet redivivus. THAT most eccentric and grotesque character, M. Aristide Fournet, has once again emerged into the disquieting light of the law courts. That is to say, he has once more undergone a disgraceful exposure that would be disquieting to anyone of less brazen forehead. He brought an action for libel against a Torquay gentleman, who had been foolish enough to consult Fournet about his sight. The defendant stated that it was agreed he should pay a consultation fee of five shillings, but he was informed by Fournet that the fee was two guineas. This was paid and what purported to be a receipt was handed to defendant, who found afterwards, however, that it was an account for £6 12s., two guineas of which was acknowledged and a balance of £4 10s. remained for three sets of lenses which were "never ordered and never obtained." The substance of the foregoing statement was expressed in a letter from

defendant's lawyers, which formed the basis of the libel. The case came to a speedy termination on the ruling of Mr. Justice Lawrance that the occasion was privileged. M. Fournet's conduct was so outrageous in Court that the learned judge told him not to "behave like a monkey" or he would be ejected. Amongst other things Fournet had to acknowledge that he was an undischarged bankrupt and that he had once brought an action to claim copyright for some literary productions written when under the influence of drink. The judge termed Fournet's present action "monstrous." In the opinion of most medical men it is equally monstrous that charlatans of this type should be permitted to prey upon the public under the guise of pseudo-qualified medical practitioners. Some years ago Fournet published an egregiously silly book containing facsimiles of a number of prescriptions for glasses from well-known ophthalmic surgeons, and, needless to say, damned the whole lot with torrents of vitriolic spume, and by damning Harley Street advertised Fournet into a kind of martyr-genius dumped by the irony of fate into the wilds of West Kensington. And this is the twentieth century with its boasted science and social culture!

* * * *

Deaths.

WITH sincere regret we have to announce that a distinguished surgeon, Mr. Arthur Quarry Silcock, passed away on December 19th at his residence in Harley Street after an illness lasting a few days only. On December 12th, whilst engaged with a patient, he was seized suddenly with acute abdominal pain. Mr. A. J. Pepper and Dr. W. B. Cheadle, who were summoned, diagnosed appendicitis. On December 16th, an operation was performed, and although the patient rallied from the immediate effects of the operation, he ultimately became delirious, and succumbed, to the great regret and sorrow of all who enjoyed the privilege of knowing him personally. Mr. Silcock was one of the few remaining who combined general with ophthalmic surgery, and at the time of his death he held the posts of surgeon to St. Mary's Hospital and to the Moorfields Hospital. He was 49 years of age at the time of his death, and leaves a widow and two

sons to mourn his untimely loss. The memorial service, which took place at St. Peter's, Vere Street, W., on December 22nd was attended by numerous colleagues and friends. THE OPTHALMOSCOPE was represented at the service by Mr. C. Devereux Marshall. Mr. Silcock's remains were afterwards cremated at Golder's Green. R.I.P.

The death is announced, at the age of 82 years, of Stellwag von Carion, a name more familiar to an older generation of ophthalmic surgeons than to the present one.

Mr. Robert James Tunmer, aged 73 years, died on December 13th, after a long illness at Fulham, London. Some of our readers will remember that Mr. Tunmer worked for several years as clinical assistant at the Royal Westminster Ophthalmic Hospital, although he never devoted himself exclusively to ophthalmic surgery.

With much regret we note the death of Mr. W. R. Hall, for many years resident librarian of the Ophthalmological Society. He was well-known to all members of that Society, and few of them have not at one time or another been indebted to his unvarying attention. Upon his retirement in August last the Members of the Society marked their sense of his worth by presenting him with a substantial cheque, an incident that was duly described at the time in the pages of THE OPTHALMOSCOPE.* It is a matter for regret that he did not live to enjoy a longer period of well-earned repose after his many years of zealous and unassuming service.

* * * *

**Annual Meeting of the
British Medical
Association.**

THE names of the office-bearers in the section of ophthalmology of the next annual meeting of the British Medical Association have been announced. They make a good list, representative of the various schools and aspects of our special branch. In many ways the contrast between the past and the coming meeting-places of the Association is not a little striking. Both Oxford and Leicester are cities of great antiquity. The one is a seat of classic learning, the other, so far as we can gather, is chiefly known to fame in these latter days by its stubborn anti-vaccination ways. The list of

* See Vol. II, p. 445.

names above spoken of is as follows :--President : G. A. Berry.
Vice-Presidents : W. M. Beaumont and E. C. Green.
Honorary Secretaries : W. W. Henry and J. H. Parsons.

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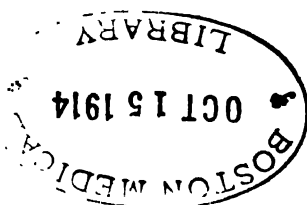
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A MONTHLY REVIEW OF CURRENT OPHTHALMOLOGY.

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ORIGINAL COMMUNICATIONS.

SOME PRACTICAL REMARKS ON MAGNET OPERATIONS ¹

BY

PROFESSOR J. HIRSCHBERG, M.D.,

OF BERLIN, GERMANY.

(My experience with the magnet now extends over a period of more than twenty-five years, during which time I have performed three hundred and seven magnet-operations.² In addition, I have followed with the greatest care all the literature of the subject, in which I am sorry to state, I have, even recently, found assertions made and rules set up which I cannot believe to be either right or useful. For instance, the statements, which are constantly repeated, by some even of the most competent eye surgeons, that a freshly wounded eye, which may contain a deeply embedded iron splinter, should be attacked at once with the giant magnet, and that an eye in which no pain is felt by the patient must necessarily

¹A communication read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Oxford, July, 1904.

²Some of these were performed by my assistants during my absence on vacation, but they were done according to my principles, and with the results I am accustomed to see.

contain no iron-splinter, appear to me to be wrong as regards the surgeon and harmful as regards the patient. It is wrong, because in my own practice I have had more than a dozen cases in which the presence of a splinter was proved by means of previous sideroscopy, radiography, or even ophthalmoscopy, but no pain was noticed from the giant magnet, and by its proper application the splinter was immediately extracted. It is harmful, because in some cases, as I am informed, this handling has drawn a large splinter into the ciliary body, whence it could not be extracted, so that occasionally the eye was lost.

Wrong, and of no advantage, is also the assertion of my friend, Professor Hermann Knapp, namely, that the use of the sideroscope requires the patience of a saint, an assertion adopted by my colleague, Professor Haab. Knapp, however, confessed to me a few weeks ago in Berlin, that his assertion referred to the old sideroscope of Asmus. However, I dare say that the remark was not correct even of that instrument, had it been properly erected and fixed. But, now, in cities and towns which are provided with an electric street current, the instrument of Asmus has entirely outlived its usefulness. My own improved and simplified sideroscope still retains its utility, and supplies a surprisingly simple and absolutely sure test. It is only necessary, as with other instruments, to keep it in good order, and immediately before and after each operation to examine it by means of a milligramme test-piece of iron fixed on a thin bar of nickel.

Sideroscopy must be tried before surgical interference, in order to ascertain the existence, the position, and the approximate weight of the iron-splinter within the eyeball. The Roentgen photograph, also, ought not to be despised, as it is by some excellent authors, although, of course, it is superfluous in fresh cases which come to the surgeon immediately after the injury or on the following day, and also in some older cases in which the splinter can be recognised by means of the ophthalmoscope. Without doubt, a clear ophthalmoscopic picture is far superior to the Roentgen photograph, but in every old case and in fresh ones in which the splinter is not visible the Roentgen picture is indispensable.

I must now draw attention to the next most important fact in cases of injury to the eye, *viz.* :—that if a splinter of iron has penetrated into the vitreous or the retina and be not properly extracted, vision of the eye is, sooner or later, lost. I do not speak of bulky splinters, which at once destroy the sight, nor of highly infective particles, which destroy the eyeball within a few days, but I speak of smaller and not remarkably infective splinters, which appear to be encap-

sulated and generally destroy vision, it may be within a few days or weeks, or it may be in a few years, either by shrinkage of the vitreous and detachment of the retina, or by siderosis of the globe and destruction of the ganglion cells of the retina. Of course, at every meeting of members of our profession there are men of experience, who have observed one case or more of splinters fixed in the retina without damage, it may be, for ten years or more ; but these are rare exceptions. If we observe a series of early cases and have opportunity to do so for a considerable length of time, we find that one case after the other falls out of the favourable group and ends in blindness. When I first commenced practice we dared not touch quiescent eyes with encapsulated splinters but fair vision ; so I saw several cases which did excellently for a certain time, but which returned some years later with blinded eyes ; even one case which had a splinter in the retina with fair sight for twenty years became blind four years later. Nothing but the early extraction of the splinter or the premature death of the patient can prevent this blindness.

In the first decades following the introduction of the ophthalmoscope we collected the cases of eye injury by splinters mentioned in literature, and in 1875 I added to the five then known a sixth splendid case of a splinter in the retina with almost normal vision. But, twenty-six years later the man came back to me ; the eye was absolutely blind with cataract and cyclitis—in fact, had become blind a year after my first observation. Thus, in my opinion, we are bound to extract the splinter from the eyeball, if we are able to do so without serious damage to the structures of the eye. In particular, we must operate upon the fresh cases : first, because we are unable to diagnose whether the splinter in the vitreous or the retina be septic or not ; secondly, because extraction is easier before dense encapsulation. But accurate diagnosis is indispensable ; a good instrument needful ; a correct plan necessary ; and some experience desirable. Finally, these operations are by no means easy and cannot be compared with cataract extraction, when we expect that the surgeon who begins certainly ends by extracting the cataract.

The results of all this surgery taken together are not yet entirely satisfactory. I am in a position to judge, as often cases have been sent to me either by professional brethren who attempted, but failed, to extract the splinter, or by our own legal steel and iron trade unions, and also because I have often had to estimate the degree of damage for an injured workman, according to our social legislation.

I daresay, that even up to date there are several eyes containing iron splinters which have been lost, either because the

splinter was overlooked or was not extracted in due time, or because a wrong plan was followed, or inappropriate instruments were used.

Concerning instruments, I have no prejudice, for I use all that are useful—my hand magnet, the middle-sized, and the giant magnet. It was and is a fable, that my hand magnet is a *pincette* with no action at a distance. It has for years proved a useful instrument, and is now a more powerful one, as it is attached to the main electric current. I have, indeed, performed some really ideal operations with this manageable and handy instrument. Thus, the injured workman arrives an hour after his accident; in the inner-lower quadrant of the eyeball is a meridional wound through the three coats, 3 mm. long, and 4 mm. distant from the edge of the cornea; a retinal hæmorrhage on the boundaries of the ophthalmoscopic field in the same quadrant covers the splinter; there, too, is the greatest deflection of the magnet needle. The patient sits, the surgeon opens the lids with his left hand, and with his right he slowly approaches the point of the hand-magnet in the line which unites the middle of the wound with the supposed seat of the splinter. When the point is about 10 mm. distant from the wound, the splinter is attached to the magnet without gaping of wound or turning up of flap, a magic sight for the surgeons present. Result absolutely perfect—patient now more than three years under observation.

In other cases it has been sufficient only to touch the wound in order to secure the same result. In a third group it was necessary to introduce the point of the hand magnet to obtain the same effect. In the last group the magnet acts like the British policeman—it arrests by touching. It is incorrect that the careful introduction of the sterilized point of the hand magnet causes loss of the eyeball by infection or by detachment. On the other hand, I would disapprove of the introduction of the bulky and not guidable point of the giant magnet, a plan lately suggested by some excellent authors.

It is a fable that my hand magnet does “not act through the coats,” as one of my transatlantic friends has stated. In several cases I secured with my hand magnet the splinter (of 7 milligrammes or of less than 1 milligramme) out of the vitreous into the anterior chamber or behind the iris, whence extraction was easy and harmless.

But, I am not one of those surgeons who insist upon the exclusive use of their own instruments, and I sometimes finish with the giant, when it seems easier or quicker. Certainly the hand magnet renders considerable help even in those cases in which the splinter is finally extracted by the giant. When

I see the splinter deeply embedded in the fundus, and diagnosis and localisation are properly made, I like to approach the largest end of my hand magnet to the corresponding point of the outer surface of the globe and try to raise the splinter from its bed by short movements of the instrument. Then, I use the ophthalmoscope immediately, and if the splinter has come out a little, I try to complete the work with the hand magnet, or I apply the giant and thus better avoid dragging the splinter into the ciliary body. This unfortunate event has occurred but once in my practice, and then in an old case which came already with detachment of the retina.

The third use of the hand magnet is to extract through the corneal section the splinter introduced into the anterior chamber. This I find easy, harmless, and elegant. Of course, I know that my colleague, Professor Haab, does all this with his giant magnet alone, and it may be perfectly harmless and successful in his experienced and skilful hands, but I must mention that surgeons of the first rank have published very bad results from its use in open wounds. I must ask your indulgence for explaining my own method, which is also based upon a long series of experiences.

Another satisfactory instrument is the middle-sized magnet of Schloesser-Edelmann, formerly attached to accumulators, now to the town current of 220 volts. With it I once extracted a splinter of 27 milligrammes, which had been for five months embedded in the retina and had already induced siderosis of the globe. The result was good and permanent.

Thirdly, Haab's giant magnet, a beneficent invention, has considerably increased the number of curable cases. My own giant magnet is more powerful than Haab's pattern: with it I have been able to extract the smallest splinters from the retina, which we so often find in casualties among our fifty thousand iron workers in Berlin. These small splinters are much more difficult to deal with than the lumps of iron, such as are found in the eyes of potato-hackers, and sometimes also in those of workmen. With this magnet I have very often extracted from the retina splinters which weighed only 2 milligrammes, 1 milligramme, or even $\frac{1}{2}$ milligramme. With it, too, I have found no difficulty in bringing the splinter through the iris, if it was too much entangled in the tissues to bring it round the pupillary margin into the anterior chamber. Generally, no trace of this remains visible, even with a magnifying glass. So far, I have never had to perforate the iris to make a way for the splinter. All this proves that the strength of my pattern is sufficient. My friend, Dölivo-Dobrowolsky, the author of the transmission of electric force from the Falls of the Rhine to Frankfurt, has lately devised and constructed

for me a new giant magnet, which is the same size but seems to be even more powerful.

Volkmann's giant magnet was tested by my assistant, Dr. Fehr, in the difficult case of a tiny splinter in the vitreous, but proved unsatisfactory, because the instrument after some minutes became so hot that the patient could not support it.

I will not enter now into the questions whether Haab's magnet is generally preferable or in which cases, for this would require much material, long observation, and more time than is conceded to me for discussion. In fresh cases with open wound I prefer a hand magnet. In old cases of retinal or vitreous splinters I have generally during late years used the giant. I cannot say that I did not sometimes regret it when the pulling of a not wholly aseptic splinter through the whole of the vitreous caused a serious irido-cyclitis, which perhaps could have been avoided by section and short extraction, or when, by firm and dense adhesion of the splinter to the retina, the giant magnet caused a later detachment. Of course, if the giant could not possibly bring forward the splinter, I did not, as a gentleman has lately published, give operation up entirely until enucleation became urgent, but I made a section, either on the edge of the cornea, in order to introduce the curved needle of the hand magnet between the already opaque lens and the ciliary body and secured the splinter, or in some instances I made my old meridional section and saved the eye.

Finally, I come to statistics. These cannot be compared with cataract statistics, for all depends upon the character of the material, and the cases which I get are very difficult to deal with, for fresh ones are in the minority, while I receive old ones which have not been attempted for want of diagnosis or fear of responsibility, and others which have been attempted unsuccessfully. Not only do they come from Berlin and from other parts of Germany but also very often from abroad. I will not criticise the published statistics, but will try to avoid the errors which I find in some of them.

First, we must try to separate clearly the cases behind the crystalline—that is, in the vitreous and retina—from those in the lens, anterior chamber, and cornea. The latter group is by no means always free from danger, but it is less and entirely different from that in the former group, which I intend to discuss alone. Secondly, we must not leave out the cases in which the splinter, notwithstanding our interference, remained in the eyeball—these we must count as losses. If a recent author has left the splinter in the eye in forty-five cases out of a hundred and fifty, and yet has counted them as successes, then is he mistaken: they are losses to be added to

his others. Thirdly, we must try to keep the cases under observation, in order to see if there be a permanent result with regard to vision. We discharged a patient with fair vision some weeks after operation, but some weeks or months later vision had been replaced by blindness, the result of detachment of the retina. This occurs sometimes, but rarely, even after classical operations, both after the application of the hand magnet through sclerotic section, and of the giant magnet without sclerotic section. But the surgical triumph of extraction is not equal to the practical use of this operation, which we like to learn as well as possible.

I now conclude with a short abstract of my own statistics for the last eight years, 1896 to 1903 inclusive. Among 3,018 clinical patients there were 64 cases of iron splinters in the retina or the vitreous operated upon by means of the electro-magnet. Of these 64 cases, 36 cases, or 56 per cent., had good and permanent vision: two-thirds of these successful cases, or 23 out of 36, obtained very good vision, from $\frac{1}{2}$ -1; 9 were from the vitreous, 27 from the retina, 22 were fresh cases, 14 were old. Of these 36 successful cases about one-third were operated upon with the hand magnet alone; two-thirds with the giant and the hand magnet together (exactly 13 *versus* 23).

Secondly, in 6 cases out of 64, or in 9 per cent., only the form of the globe was saved, but vision was lost.

Thirdly, in 22 cases out of 64, or in 34½ per cent., excision followed the extraction of the splinter: in the large majority of these cases either the splinter was over large, or cyclitis or sepsis had already developed when the patient came for treatment. In one case a very severe after-bleeding with cyclitis were the cause of excision, and in another case retinal detachment followed five months after the extraction of the splinter with irritation, and rendered excision necessary. In 4 cases only of old splinter in the fundus (a small number in my opinion) was I unable to carry out extraction.¹ Two of them were sent or lent to me by their surgeons, in order that the giant magnet might be tried in their cases: they were returned with undamaged eyes. The third case is not yet given up entirely and will be operated upon later on. The fourth case, one of five years' standing, came from Central America, and the eye had to be excised. If we add these four cases to the losses the latter will be increased to 38 per cent., and the good results correspondingly decreased to 53 per cent.² Thus we

⁽¹⁾ I can add some other cases of trial with giant magnet, two of which were recognised as double perforation of the globe. In two others no splinter was found, in spite of Roentgen rays and sideroscopy.

⁽²⁾ Haab published 33%—40% of vision among the more difficult cases.

see that in these cases of serious injury to the eyeball, in which a splinter of iron, sometimes of very infective character, had penetrated deep into the globe, vitreous, or retina, and of which only a certain proportion came immediately or shortly afterwards to the surgeon, 53 per cent. obtained real benefit from magnet-operations, *viz.* :—preservation of sight and two-thirds of these very good sight. This is a result which awaits the attention of every conscientious and benevolent eye surgeon, a result which will be still better as instruments and methods improve, and also as greater care is given to our poor injured workmen.

I cannot finish without lamenting the recent and premature death of our British colleague M'Keown, to whom science is so much indebted for the promotion of this important surgical operation.

ON THE CORRECT USE OF THE GIANT MAGNET.

BY

PROFESSOR O. HAAB,
OF ZÜRICH, SWITZERLAND.

Introduction.—If we want to remove a chip of iron from the eye, successfully and without damage, it does not suffice to bring the eye near a giant magnet, but we must apply this valuable instrument in the right way.

Knowing that in many places the magnet operation is not always performed correctly, I wish to give here a short description of the system on which I proceed, this system being the result of my experience, derived from more than two hundred operations performed by means of the big magnet during the last twelve years. For, in fact, practice is the best guide we can follow in this matter.

Requisites of the magnet.—First of all, I will define the right construction of a magnet for eye-surgery. The big magnets used by the physicists in their laboratories are not the right instruments for removing chips of iron from the eye, although I performed my first operations by their help. It is evident that for our purpose the magnetic power of the instrument ought to be concentrated on a spot which is as convenient as possible for drawing out the foreign body. The big magnets which physicists use are built for other purposes. The ophthalmic surgeon needs the concentration of the magnetic power, in order to guide the foreign body by force along the right path it has to take from the vitreous chamber through the

anterior chamber and the cornea. For, above all things, we must avoid drawing the fragment into the ciliary body, from whence it is extremely difficult to extract it. The foreign body has to take its course through the space between the ciliary body and the lens by sliding round the latter. Circumstances being favourable, it pierces with great velocity the suspensory ligament and appears in the posterior chamber, projecting the iris forward.

But the longer the end, the more its magnetic power decreases. The deeper a piece of steel has penetrated into the eye towards its background, the stronger must the magnet be in order to withdraw this foreign body, lodged perhaps 20 mm. to 25 mm. behind the anterior surface of the cornea; but by unscrewing the point we can raise the magnetic power of the magnet considerably.

Any foreign body lodged in the retina or in any other part of the eye, should be loosened by attracting it in jerks. For this purpose we have to cut off the current suddenly when at its full strength; then reopen as suddenly; and we must repeat this quick attracting process several times. The magnet must, therefore, be so constructed as to give to the surgeon the utmost facility in closing and opening the current, which should be done by himself, not by an assistant. It is important that the surgeon should control the current himself, for he must act just at the right moment and without delay. Hence I have added a switch to my instrument. Being at the lower part of it, it allows the operator to put the magnet out of action instantaneously, and to close the current promptly with the *foot*. I attach great importance to this switch, which by spring-power opens the current whilst not used automatically. This affords another advantage in removing the danger of over-heating and destroying the magnet through too long an action of the current if, for instance, one forgets to cut it off after an operation.

The possibility of thus readily and suddenly putting the magnetic power in action, and of withdrawing it, compensates pretty well for the want of mobility of the giant magnet. Meyrowitz, Volkmann, and others have made great efforts to render this instrument as movable as possible, so that it may quickly be approached to the eye in any direction and removed as easily. It is my opinion that a giant magnet, being too heavy, is always insufficiently movable, even if suspended with the greatest skilfulness.

Moreover, we have to consider that the head of the patient, as well as the eye to be operated upon, is easily movable. It is obviously much more simple to move the eye or the head of the patient than a magnet weighing two hundred pounds. Therefore, I do not like the patient to lie on the operating table whilst the magnet hangs up above his face, as Gayet, Mayweg, and

Volkmann have recommended. In the beginning of the operation, very often the quickest pushing back of the patient's head from the magnet is indispensable, otherwise the foreign body becomes entangled in the iris. At this critical moment the patient, feeling pain, generally helps the surgeon by drawing back his eye from the magnet; but, if he is lying on the operating table, he is prevented from doing so. For the same reason I cannot approve of the support for the patient's chin fitted to Edelmann-Schlösser's new magnet.

Consequently, my magnet is arranged in a horizontal position. The patient, sitting on a revolving chair, places his elbows on a board fitted on to the frame of the instrument. The magnet, capable of being turned like a weather-cock, can be used at both ends. One of them, sharper than the other, is intended for the extraction of metallic particles from the anterior chamber.

The larger the piece of steel, the more vigorously is it attracted by the magnet. As in such a case the interior of the injured eye might be damaged by the too hasty attraction of the foreign body, it is advisable to diminish the strength of the magnet either by inserting resistance into the current, or by withdrawing the injured eye to a greater distance from the instrument. This is much more convenient than a rheostat, which now I never use. Again, the force of the attraction can be diminished either by giving a longer point to the magnet, or by making use of W. Lang's cable.¹ Of late I have ordered my magnet to be built with different tips, which can easily be changed.

Considering all the above-mentioned qualities necessary in a good giant magnet for oculists, I venture to say that the instruments constructed and recommended lately by Volkmann, Edelmann-Schlösser, and Hirschberg, although very strong, hardly produce more effect than mine, described first in Deutschmann's *Beiträgen zur Augenheilkunde*, Vol. II, 1893, and not long ago in my *Atlas and Treatise on Eye Operations*.² Although I have not used them, I am afraid the three instruments mentioned do not give a comprehensive view of the field of operation, as the end of the magnet does not stand out sufficiently from the coil. Moreover, Volkmann's magnet is said to get very hot in a short time. I am convinced that all these three instruments are very strong; that gives me great satisfaction, as I have always emphasized the fact that the eye magnet should be as strong as possible. This principle turned out to be a

1. Lang, W.—A Note on the Use of Haab's Magnet. *Roy. Lond. Ophth. Hosp. Rep.*, Vol. XV, 1903. For abstract see THE OPHTHALMOSCOPE, Vol. I, p. 18.

2. The instrument is made by Rieter & Co, Winterthur, Switzerland, represented in London by D. Santoni & Co., 28, Ely Place, Holborn Circus, E.C.

correct one, so I approve emphatically of the large size of Schlösser's new magnet, which was formerly too small. Another drawback of these three magnets is the impossibility of closing their current by means of the foot.

Use of the giant magnet.—For ten years I have opposed the view that the magnet operation was a very simple affair, and that it was sufficient to bring the injured eye near the magnet to get the foreign body simply torn out by it. In the second paper about my magnet method I drew attention to the fact that the intruding substance, on being attracted forwards, does not follow the way of entrance but the lines of power of the magnet. Hence, it slides almost regularly around the lens, and appears somewhere behind the iris. I have also always warned operators not to pull the iron particle into the ciliary body, and on every occasion I have declared iridectomy was perfectly superfluous, on condition that the operation was performed in the right way. By all this I insisted upon the difficulty and delicacy of this operation.

Therefore, of course, the surgeon has to watch the eye exposed to the magnet, and to survey it during the whole operation, being careful always to have the tip of the magnet opposite the right point in the eye. Consequently, a full view of the eye is necessary, and a correct point to the instrument indispensable; that is to say, the pointed end of the magnet must stand out sufficiently from the coil to afford the surgeon a free survey of the field of operation.

As a speedy extraction of the foreign body is most important, it is not advisable to lose time in examining the eye by *x*-rays and the magnetic needle (sideroscope). If necessary that can be done afterwards. In the majority of cases we need not trouble about the resting-place of the foreign body, although it is most important to look for the wound of entrance, and to make out its size, this notifying the largeness of the particle. Furthermore, we have to study the path taken by the foreign body in the globe, for if we conclude that it is lodged in the ciliary body we have to be especially careful in extracting it.

The greater number of iron particles enter the eye through the cornea and the scleral border, and in one-half of my two hundred cases, the lens was injured. We are often not able, therefore, to distinguish the foreign body in the vitreous chamber or the retina; but in all cases where the lens is clear, an examination of these parts of the eye by the ophthalmoscope is useful, in order to find out the size and the situation of the foreign body. Furthermore, thorough preparation of the eye by means of cocaine, atropine, and, if necessary, adrenaline, is most important. An enlarged pupil is very helpful when withdrawing the foreign body into the anterior chamber.

After having carefully cleansed the tip of the magnet, as well as the wounded eye and the skin around it, and after having put away our watches, we provide good natural or artificial light and begin the operation. The surgeon standing close to the side of the instrument, clasps the head of the patient with both hands, holding his eyelids with the thumbs, and bringing the head into the right position. If the patient is nervous, and therefore does not approach his eye to the magnet, the surgeon should stand behind him and push his head gently towards the instrument. By bending forward he can quite well survey the injured eye.

In the majority of cases the best way back for the foreign body lies through the anterior chamber, and in all these cases the patient's eye should, *as a rule*, be brought in such a position with regard to the magnet that its point is *opposite the middle of the cornea*. By doing so we prevent the foreign body, as far as possible, from getting entangled in the ciliary region. If we suppose the foreign body to be small, as in the majority of cases it is, the cornea must nearly touch the magnet terminal, and we have to close the current in its full strength at once. If a large particle is expected, the patient's head may remain at a certain distance from the instrument.

As soon as the eye is in the right position, the surgeon closes the current with his foot. At this moment the patient often draws back his head suddenly, and it is better to let him do so, because probably we have already pulled the foreign body behind the iris. It would be bad to continue now the extraction and to let the metallic particle penetrate into the posterior surface of the iris. We cut off the current and bring the eye into a new position, according to the spot where the foreign body makes the iris bulge forward. If it lies behind the lower part of the iris, we bid the patient look downward, and approach the upper part of the cornea to the magnet; then we close the current again, and, in the great majority of cases, we see the particle slip into the anterior chamber through the pupil. Sometimes it is a little difficult to get it loose and bring it into the anterior chamber. Repeated attraction in the right direction, obliquely through the pupil, is necessary, even though pulling the iris considerably towards the magnet, does no harm.

If we cannot extract the fragment from behind the iris, we put the patient on the operating table and remove the particle by introducing the magnetic probe of the small magnet (Hirschberg's, Fröhlich's, Snell's, etc.) through an incision of the cornea behind the iris, or by applying Lang's method. "A steel spatula made for me by Weiss, in the form of a spud, but with a rounded end," says Lang, "is passed between the lips of the corneal section across the anterior chamber, through the pupil and between the iris

and the anterior lens capsule. An assistant now connects the base of the spatula, by means of a few strands of soft iron wire twisted into a rope, with Haab's magnet, which is brought close to the patient's eye; the spatula is withdrawn with the foreign body adhering to its end" (*loc. cit.*).

When we have brought the metallic particle by the regular proceeding into the anterior chamber, we remove it completely either by the help of the small magnet, or (as I generally do) by the large instrument. A fair-sized incision is made in the cornea, preferably either with a broad needle or with a cataract knife, taking good care not to let the aqueous humour flow out, as it is important for the fragment to be able to move freely, if possible. The sharp point of the big magnet is then brought close to the incision, and, if necessary, is pressed into it a short distance. Frequently the foreign body glides quickly out of the incision. It often occurs that the splinter has fallen into the lower part of the anterior chamber, in which case, of course, it should be raised behind the middle portion of the cornea, and drawn from thence towards the incision. The patient's head should be then so moved that the point of the magnet passes in a centrifugal direction over the incision in the cornea. So the foreign body often finds its way to the incision and escapes; should it not do so, the point may be pressed somewhat into the wound. But if the foreign body slips peripherally into a position between the incision and the corneal margin, it must be guided back to the centre of the cornea, and the manœuvre repeated.

It is almost needless to say that if the wound of entrance of the foreign body is situated favourably in the cornea, it can be used for extraction. Even after several days I have extracted foreign bodies through the entrance wound.

This last portion of the operation sometimes presents difficulty and always requires care, but may be most successfully performed by means of the giant magnet. When the splinter is of a large size and has especially sharp edges, which might damage the yet uninjured lens in its movement to and fro in the anterior chamber, it is better to let the patient lie on the operating table, and to withdraw the foreign body cautiously with the small magnet or by means of Lang's spatula.

Iridectomy should be performed as rarely as possible. Indeed, I have never done it myself. Should the iris fall into the wound during the process of extracting the particle from the anterior chamber it must be replaced.

If the eye is inflamed by the foreign body (hypopyon), a little rod of iodoform should be inserted in the anterior chamber according to the method already described by me.²

2. Haab.—*Atlas und Grundriss der Lehre von den Augenoperationen*, 1904, p. 95.

In the far less numerous cases in which the fragment has pierced the sclera at a distance from the cornea, the first question always is, whether it should be extracted through the original wound or through the anterior chamber. If the wound is quite fresh it may be possible to draw the foreign body back through it by means of the giant magnet, without its being necessary to push the point of the instrument into the wound, which would increase the injury to the vitreous; for the same purpose the wound in the sclera might be enlarged or a fresh one be made. In this respect the big magnet is preferable to the small one. Even a slight opening of the wound in the sclera with the sharp point of the big magnet would not be a serious risk, if carefully done.

Yet as the particle is not visible in the interior of the eye when the extraction takes place through the sclera and the operation is hence necessarily carried on somewhat in the dark, it is advisable, as far as possible—and always with small fragments—to withdraw the foreign body through the anterior chamber. Hence, the important advantage of the big magnet consists in the avoidance of injury to the vitreous. It is evident that an incision made in the cornea is of much less consequence than one in the sclera.

In general, as often as possible, I extract the chip of iron through the anterior chamber, because, as I have stated, that mode of procedure avoids injury to the vitreous.

If a steel fragment is caught and retained in the interior of the eye—as, for instance, in the retina, in a hæmorrhage or an exudation—and does not immediately respond to the magnetic force, the operation should not be abandoned too soon. By repeatedly opening and closing the current, the fragment must be attracted in jerks, and should always be guided first towards the centre of the cornea. If it does not make its appearance thus, an attempt should be made to draw it sideways towards the equator and thence into the anterior chamber. Great care should be taken that these continued efforts do not draw the fragment into the ciliary body. Should it be noticed that the patient is not holding his eye in the right position or has altered it in any way, the current must be opened at once and the eye brought into the correct position. If the operation is a long one, cocaine must be dropped into the eye at intervals.

If these efforts be at first unsuccessful, the operation must be repeated the next day. I have sometimes been rewarded by success only after several days.

In difficult cases it may be advisable to search for the metallic particle with the sideroscope and the Röntgen rays. The possibility of the particle having penetrated the back wall of the eyeball and that it may be lying outside the eye must be taken into consideration.

If the foreign body has not been withdrawn from the eye by the proper application of the big magnet, it is almost useless to attempt its extraction with the small magnet, especially when there is any uncertainty as to the position of the fragment.

There is, of course, always a much greater probability of a successful operation when the accident is of recent date. It is generally better to leave undisturbed metallic foreign bodies which have been long seated in the interior of the eye.

These remarks do not exhaust the subject—it cannot be fully treated here for want of space—but they state a few essential rules to be observed in magnet operations. The results of my further experience made during the last few years are recorded in the *Zeitschrift für Augenheilkunde* (Vol. VIII, 1902) and in my *Atlas und Grundriss der Lehre von den Augenoperationen*, already referred to.

THE ELECTRO-MAGNET IN OPHTHALMIC SURGERY.

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“The introduction of the electro-magnet into ophthalmic surgery has proved of enormous benefit, and by its means many eyes have been saved which would otherwise have been lost.”

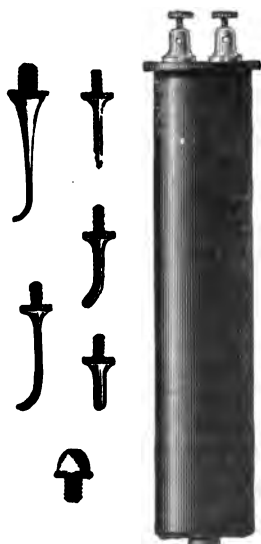
This extract is taken from a recent excellent text-book* on diseases of the eye, and no one who has had experience of the electro-magnet will question that it states what is now a truism. In my first paper in 1881 I wrote “there can be little doubt that it is a proceeding of the highest value and destined to preserve vision to many eyes, whilst in others it may at least secure a presentable organ and one free from irritation.” Looking now at the important and well-recognised position the electro-magnet occupies in the armamentarium of the ophthalmic surgeon, it is interesting to note that a criticism of my book on *The Electro-Magnet in Ophthalmic Surgery*, published in 1883, was “that the subject is too limited to deserve a separate volume.”

My experiments with magnets and then with electro-magnets commenced twenty-six years ago, and my first instance in which an electro-magnet was used was in 1880. The electro-magnet then employed was not one capable of being introduced into the eye. The fragment was clinging to the inner sclerotic wall, and “after

*Lawson.—*Diseases and Injuries of the Eye*.

the electro-magnet had been applied a little time the foreign body was found to be fairly in the wound, which had been slightly enlarged, and it was readily removed therefrom with a fine pair of forceps." The resulting vision was 6/6. This was a simple case compared with instances of foreign bodies in the vitreous and in the retina which have in succeeding years come under operation.

Further experimentation resulted in the electro-magnet being devised which was described by me in 1881 (1), or just 24 years ago now at the time of writing. It consisted of a core of soft iron, covered with copper wire, one end receiving the battery connections whilst the other was tapped, and into it a needle could be screwed which fitted closely on the extremity of the magnet by a projecting cap. "Several of these needles are provided, some longer or shorter, and straight or curved at the end." It was employed attached to a quart bichromate battery. It had been in use for some time previously.



HALF ACTUAL SIZE.

About the same period Bradford in America described an electro-magnet on the same principle.

This tapping of one end of the magnet so as to permit of any size or shape of needle the case might require being attached, was, in my opinion, a distinct advance on anything I then knew or afterwards learnt of electro-magnets for ophthalmic use. Hirschberg's magnet (2) which he had employed prior to the publication of my paper, was tapered at each pole, and thus only admitted of the use of the two fixed extremities for introduction into the eye, nor was it so powerful as the one I described.

The electro-magnet which has, since 1881, borne my name, has varied little from the original model except in superior workmanship. The maker has had directions to issue no magnet which, with an end piece of 1 inch long and 2 mm. thick, and

(1) Made by Preston, Barkerpool, Sheffield.

(2) At Prof. Hirschberg's request I sent him my magnet for his inspection immediately after my original paper appeared. In a subsequent article he said he found it very powerful. Later, Hirschberg adopted a model with a whole arsenal of both bent and straight end pieces—long and short, thick and thin—at the same time asserting that he had no grounds for dissatisfaction with his own instrument.

attached to a quart bichromate battery,* was unable to raise and to hold suspended a weight of at least 7 ozs. Usually the strength has been in excess of this standard.

So well established has the electro-magnet become in ophthalmic surgery that for many years I have ceased to publish any series of cases. I have, however, at different times recorded instances possessing features of special interest: such, for example, as those in which the electro-magnet enabled me to remove fragments from the retina with excellent visual results. I purpose, however, to take the opportunity now afforded, and to review the subject briefly. My experience is based on fully 300 instances in which the electro-magnet has been employed, and as the field is a wide one, it will be evident that it is impossible to treat it at all completely within the limits of the space at my disposal.

It is in exceptional cases only that the electro-magnet is of service for splinters in the cornea. Among these instances may be mentioned those deeply embedded nearer the posterior than the anterior surface of the cornea. Attempts at removal by ordinary methods will end in opening the anterior chamber and, possibly, the passage of the foreign body inwards. Such cases, however, can be treated successfully by passing a keratome through the cornea and using it as a background on which to work with a needle or spatula until the foreign body is exposed, and it is then that the point of the electro-magnet will more readily remove the splinter than other means. This is shown by the following instance, in which a small piece of steel was embedded in the cornea near the sclero-corneal junction. Previous efforts to remove it had resulted in the opening of the anterior chamber. A narrow iridectomy knife was passed through the cornea near the periphery and having the cornea in front containing the fragment, served as a base to work upon for its extraction, and avoided the danger of pushing it into the anterior chamber. The corneal tissue was opened up by a broad needle in front of the piece of steel, and then it was immediately removed with the electro-magnet. The situation of the chip was so near the anterior chamber, that, in dissecting the cornea over it, the fragment moved about on the iridectomy knife. The operation was followed by slight iritis, which in the course of a few days subsided. V.=6/6.

From the anterior chamber and iris the electro-magnet will enable splinters to be removed, frequently with complete preservation of vision. The original wound may need to be enlarged or re-opened, or a fresh corneal incision may be necessary. A portion of iris, if the splinter is entangled, may also require excision. In these cases the electro-magnet often renders excellent service in diagnosis, for if the magnet be

* When the street current supply is available it can, of course, be used.

applied to the cornea with a short, thick end,* the nature of a foreign body is disclosed by its movement. This refers also to splinters in or on the lens capsule. A fragment may on the approach of the magnet spring forward from the iris or lens capsule against the cornea, and I have in many instances guided a splinter with the magnet to the most suitable situation for its extraction through a corneal incision. The following are illustrative cases :—

A patient was injured in the right eye. He was not seen until four months after the accident. There was then in the centre of the anterior capsule a little yellowish mark which suggested the likelihood of a very minute foreign body, being located there. A small scar in the cornea, rather to the inner side of the centre, was discovered. The pupil was then dilated with atropine, and cocaine was instilled, and, with a view to confirming the diagnosis, the electro-magnet was held in close contact with the cornea. The mark on the capsule was noticed gradually to become darker. Suddenly a minute fragment flew to the posterior surface of the cornea. When, however, the patient was placed on the couch for operation the fragment had disappeared, nor could it be discovered in the dark room with focal illumination. He was again placed on the couch and on the magnet being advanced to the cornea the splinter again sprang forward and it was then guided to a convenient situation on the iris for removal, and the magnet was withdrawn. A small corneal wound was next made on the outer side, the fine point of the electro-magnet was introduced, and the foreign body extracted. Later, the lens became opaque, but was removed with a satisfactory result.

A man, aged 33, nine years before being seen was hit on the right eye by a piece of steel. Under treatment at a hospital the eye became quiet and remained so until a few days before coming to me. Then he was suffering great pain and the surface of the eye was reddened. V. — p. l. Lying on the iris at its lower part was a dark body with an irregular-looking surface. The pupil was small and did not dilate to atropine ; it was filled with the remains of opaque lens. It was thought that the dark body on the iris was a fragment of steel surrounded by old exudation. The diagnosis was at once made positive, for, on advancing the electro-magnet to the cornea, the foreign body followed the course of the magnet in all directions. It was finally deposited on the iris at a convenient place for removal. This was effected by the magnet through a small corneal incision

* With the button end piece (*vide* engraving, page 66) which is suitable for use in this manner, my electro-magnet supports a weight equal to 2½ pounds or, if the magnet is employed without any end piece, 3½ pounds.

on the outer and lower side. The patient made an excellent recovery with vision as before, *viz.*, light perception.

J.M. was seen twenty hours after the accident. The fragment was observed embedded in the iris, close to the outer margin of the pupil. On applying the magnet to the cornea, the foreign body at once sprang forward, dragging the iris with it. A small corneal incision was then made, and the fragment removed with the small point of the magnet. Resulting V. = 6/6.

In another case a fragment was embedded in the iris above and to the outer side; it was covered with exudation and there was hypopyon. On approaching the magnet, movements showed the nature of the body. It was removed through a corneal opening by the electro-magnet.

The aid to diagnosis is clearly shown by these cases, but a further advantage is illustrated, *viz.*, that of guiding, in some instances, by the electro-magnet, a splinter from one part to another, and then, on the withdrawal of the magnet allowing it to drop on the iris again at a situation more suitable for its extraction.

The majority of cases, as well as the most serious, that require the aid of the electro-magnet are those in which foreign bodies are situated in the posterior part of the eyeball.* In many the nature of the injuries, size and situation of the wounds, are such that, apart from the location of the foreign body, the prospect of recovery of sight is very little. The eyeball, again, may have become seriously disorganized, and past recovery, before an opportunity for operation is afforded. Fortunately, however, in others the extraction of the splinter results in securing good vision.

Let us take those in the vitreous first. If the injury is recent and the foreign body be free in the vitreous, as a rule, its extraction will be effected without much difficulty by the electro-magnet. The success, as far as recovery of vision is concerned, will largely depend on the situation and size of the wound caused by the foreign body and the time intervening between the accident and the operation. The element of "time" is of the first consequence in vitreous cases. The prospect of

* In 140 cases the situation of the fragments, and the average weight of the same were as follows:—

In the Vitreous	there were	84,	the average weight being	gr. 2.82
In the Lens	do.	18,	"	gr. 1.59
In the Sclerotic	do.	3,	"	gr. .02
In the Retina	do.	6,	"	gr. .36
In the Cornea	do.	10,	"	gr. .01
In the Conjunctiva	do.	5,	"	gr. .18
In the Ant. Chamber	do.	3,	"	gr. .13
In the Iris	do.	8,	"	gr. .44

Among those in the vitreous were such large pieces as the following. 1 each of gr. 36, 33, 22, 12, 11, 10, and 9.

saving an eye will be inversely to the interval between the injury and the time when the electro-magnet is employed. Another point is whether the fragment was a clean one or not. The vitreous may be regarded as an excellent medium for the growth of micro-organisms. If the foreign body itself be not septic the prolapsed vitreous may be the starting-point of sepsis.

Leaving for the present the question of the route to be selected when operation with the electro-magnet is decided upon, it may be mentioned that as short and large an end should be employed as is consistent with the particular case, bearing in mind always that the power of attraction diminishes rapidly as the attachment is lessened in size or carried farther from the coil around the core. Given an electro-magnet such as I have described, attached to a battery in good working order, then failure to extract a foreign body from the vitreous should be very rare. Under certain conditions non-success will result. It is curious that the causes of failure with large magnets are placed under the same headings that I have been accustomed to do those for my magnet. They are the following :—

That the foreign body be : 1. Embedded in the coats of the eye, at the back part ; 2. or entangled in the ciliary region ; 3. or embedded in a mass of effusion.

As instances of failure I take these from my recorded cases.

(a) The patient was a middle-aged man. There was a large corneal wound in the right eye and the lens was opaque. The day following, the lens was removed through the original wound, which was enlarged for the purpose. The electro-magnet was introduced without result. Later, the eyeball was enucleated. The piece of steel was found embedded in the optic papilla, and projecting into the interior, and was visible at the point of section of the optic nerve. The condition is depicted in the wood-cut.



(b) G. B. ; whilst at work a piece of steel flew from his hammer into the left eye. He came to the Infirmary with a wound of the cornea and traumatic cataract. The softened lens was let out and the electro-magnet was introduced, but no foreign matter was detected. The eye continued painful, but he declined to submit to enucleation. Eighteen months later he consented and the eyeball was excised. The chip of steel was then found embedded in the outer side of the sclerotic at the back, quite beyond the reach of a magnet.

(c) J. W. aged 17 years. The splinter had passed through the edge of the cornea, iris, and lens of the left eye. The electro-magnet passed into the vitreous, "clicked" the fragment at the back of the eye, but did not extract it. The globe was enucleated ; at the time of section the scissors pressed the splinter out of the optic

nerve, and it was removed from the orbit with the electro-magnet. The fragment weighed 1.01 grains.

It is necessary, when the use of the magnet is decided upon, that every care should be taken in the preparation of the eye for operation and in the sterilisation of the instruments. The eye should be bathed with sublimate solution and all instruments to be used should be sterilised in boiling water. The end of the magnet which has been selected, and which may therefore need to be inserted into the interior of the globe, must be carefully boiled.

When dealing with foreign bodies in the posterior part of the globe an important matter for consideration is the route by which the magnet is to be introduced into the eye. In a recent case with unclosed wound in the sclerotic this will usually be selected, even if the original wound needs enlarging. There are instances also when the wound of entrance has closed that it will still be the wisest plan to enter the magnet through the sclerotic when the lens is uninjured. It is a matter, then, of importance as to the best way of incising the sclerotic for the passage of the point of the magnet. The exact situation must, of course, be determined for each individual case, but care, in all, must be taken to avoid the ciliary region. Experience has taught me that the best procedure is to separate the conjunctiva for some little distance from the intended site for the sclerotic puncture, and then after bleeding has ceased, to introduce the knife in such a way as to make the incision in a line from the cornea towards the equator. As a result of experience in many cases I find it is often convenient to select a site between the external and inferior recti muscles, but each case will determine the best situation. The sclerotic wound must be sufficiently large, not only to enable the point of the magnet to be introduced, but to prevent, as far as possible, the stripping off of the fragment at the edges of the wound. It may be necessary to add to this linear wound a cross cut at its posterior extremity. After the removal of the foreign body the closure of the separated conjunctiva by sutures will bring into close apposition the edges of the deeper sclerotic wound. The tendency of all sclerotic wounds to become depressed and to lead to softening of the globe is well known. In my opinion, this is a frequent cause of the failure to obtain, or to retain, good results after magnet operations. This remark applies to the wounds, occasioned by the fragments, which are frequently jagged, as well as, but in a less degree, to the intentional ones made for their removal. A sclerotic wound means injury also to the choroid and retina, and we know from the interesting investigations of Parsons that in the healing of sclerotic wounds the injurious effects are observed in the underlying tissues for some distance around.

Experience, therefore, has led me to believe that in many instances the anterior route should be selected. This applies especially to cases in which the foreign body has passed through the lens and rendered it more or less opaque. After a corneal section as much of the softened lens as possible should be removed and the point of the magnet introduced into the vitreous. The disturbance of the vitreous will often be less, as will the danger of detached retina, than if the sclerotic route had been chosen.

Splinters of steel or iron in the retina call for removal by the magnet. Formerly I held, with others, that foreign bodies in the retina were frequently tolerated in such a way that the eye not only remained quiescent but that they caused so little disturbance that vision was retained—the sight often being excellent. Some time ago I recorded several instances of such tolerance of foreign bodies in the background of the eye. At one time or another more than a dozen similar cases have come under my notice. I was therefore disinclined to use the magnet or to advise the patient to submit to the risks attendant on an operation when there appeared from one's then experience that there was a fair chance of retaining vision if the foreign body was uninterfered with. I have, however, been led to abandon this *laissez-faire* practice for two reasons: 1st.—I have seen several instances in which this hopeful prospect has not been fulfilled and the eyes have been lost, whilst in others the foreign body has subsequently become detached and has needed extraction by the magnet. 2nd. My experience of the extraction of fragments from the retina by the magnet has been so satisfactory that I am much more disposed to advise immediate operation. I have, I think, removed eight splinters from the retina. Five corresponded exactly to those in which formerly no operation was performed. The fragment was diagnosed by the ophthalmoscope and its exact situation located. Three were operated on immediately. In each of these, the end of the magnet was advanced to the position where the foreign body was situated, and the piece of steel extracted. It is a convenience, especially when the foreign body has been exactly located, to advance the point of the magnet to the situation before the current is turned on.

Two of the cases yielded excellent results. One has been under observation at intervals up to the present time—that is for six years—and the resulting vision, 6/5, is still retained. I give here brief records of these cases.

On October 24, 1898, Mr. H. B. M. was driving a wedge with a hammer, when a splinter flew off and struck the right eye, but it was not until November 5th that he came to me. Examination then disclosed a small linear wound at the periphery of the cornea, at its outer edge, corresponding to about the centre of the

palpebral opening. Beneath this corneal scar was a small opening in the iris at the periphery, which at once suggested the probability of the foreign body having penetrated and being located in the globe. $V.=6/6$. The media were clear, but in the fundus towards the periphery, on the outer side, just above the meridian line, a mass of whitish effusion was noticed, in size equal to about two diameters of the optic disc. There was only at one point anything resembling the glistening noticeable when a metallic body is embedded in the retina, and this was very trifling. The situation of the effusion corresponded exactly to the line a foreign body passing along the track, indicated by the corneal scar and the wound in the iris, would take, and no doubt was left in my mind that the fragment of steel was actually embedded in the retina, and coated over with this whitish effusion.

His consent was obtained and the operation was performed four days later. The site selected for incising the sclerotic and introducing the electro-magnet was between the external and inferior recti; indeed, a little external to the latter appeared the best situation from which to advance the point of the electro-magnet to the location of the foreign body. Cocaine was therefore instilled, and the conjunctiva separated from a point in front of the intended puncture back towards the equator. After bleeding was stopped, the sclerotic was incised, and the point of the electro-magnet introduced and advanced to the situation of the foreign body. A second introduction was necessary, but then the piece of steel was extracted; it weighed 0.16 grain. One surface was coated white, and this demonstrated, if further testimony were needed, the fact that it had been situated as diagnosed, one surface lying in the retina and the other coated over with effusion. The conjunctiva was united by sutures. On December 16th, $V. = 6/5$, and it has remained so to this day.

In the second case the right eye was injured. The splinter of steel had entered at the sclero-corneal junction at the inner side (not outer) and there was a hole in the iris through which it had passed, and the track the foreign body had taken was made out by the opacity it had caused at the periphery of the lens. Examination with the ophthalmoscope disclosed the fragment of metal fixed in the retina in the lower and outer quadrant. The glistening of the steel was distinct, but it was surrounded and partially covered by whitish exudation. The vitreous otherwise was but little disturbed, and $V. =$ about fingers. The sclerotic was incised between the internal and inferior recti, and the electro-magnet was advanced to the situation of the foreign body. On withdrawing it the fragment was not attached. Again the electro-magnet was passed into the eye and a "click" was immediately heard but with a like result. A careful

search was made round the wound to ascertain if the splinter had been peeled off when the magnet had been withdrawn, but it could not be found. A third time the electro-magnet was advanced to the situation of the foreign body; a "click" was again heard, and this time on withdrawing the instrument the piece of metal was found adhering to it. The exact situation of the fragment in the retina had been ascertained but the splinter was clearly too firmly fixed either in the retina or glued by adhesions of lymph, to be detached at the first two occasions it was brought into contact with the electro-magnet. The opacity in the lens remained unaltered and vision = $\frac{6}{24}$.

A most important matter is the diagnosis and the localisation of the fragment. The history given by the patient is often misleading and the difficulty is increased when, as sometimes happens, the point of entrance of the foreign body is no longer distinguishable. One is, however, frequently able to form a fairly correct opinion as to whether or not a fragment has penetrated and is located inside the eyeball. The diagnosis is assisted by the history of the accident, from chipping for instance, and also by the situation and character of the wound. I am satisfied that experience in a large number of accidents does enable one to say with something like precision whether a foreign body is inside the eye or not. In the anterior chamber, in the iris and lens, usually a splinter is visible and there is, as a rule, not much difficulty in diagnosis. The assistance rendered to diagnosis by bringing the magnet into close apposition with the eye has been already mentioned.

In the posterior portion of the eyeball the ophthalmoscope will often be of service, and it becomes the most exact means we have for the localisation of the foreign body. A splinter in the vitreous, already recognised by the ophthalmoscope, may on the approach of the magnet to the sclerotic be observed to move towards the part where the magnet is placed.

The localisation of the fragment, when practicable, is most important, and the visual results are likely to be much better than in those cases in which the magnet is used where, although a foreign body be in the eye, its exact position has not been determined. The instances of removal of foreign bodies from the retina are brilliant examples. In these the precise situation of the fragment was determined by the ophthalmoscope, and the point of the electro-magnet was advanced to this exact spot.

The x -rays have rendered, in many instances, material assistance. One of my cases was amongst the earliest recorded. A foreign body had been previously made out surrounded by lymph in the upper part of the vitreous. Dr. Mackenzie Davidson, who examined the case with the x -rays "localised a fragment of steel, apparently needle-shaped, in the vitreous. It

is about 7 mm. or 8 mm. in length, and is situated obliquely. It is evidently embedded in the white mass visible upwards in the vitreous." I subsequently extracted the fragment through a scleral incision, and found it, as the skiagram had indicated, "needle-shaped" and about the thickness of a sewing needle. It weighed 0.56 gr., and measured 9 mm. in length.

The recorded instances are very numerous which testify to the value of the x -rays for localising splinters in the posterior part of the eye. It requires, however, a skilled operator to use this means successfully, and unfortunately such a one is not always available at the required moment. The failure to detect a foreign body with the x -rays should not always be held to exclude its presence.

It is not my purpose to discuss here whether or not a large magnet has advantages over a small one, my object being rather to set forth the value of the hand magnet. It is sufficient, therefore, for me to quote the following passage from MacCallan's excellent article (†).

"Until I completed these tables I was of opinion from practical experience of the use of the two magnets that the Haab's magnet results would entirely overwhelm those of the small magnet. This, however, is not the case."

An immense difference between the two is at once evident. One is easily handled, is portable, and comparatively inexpensive. It can, therefore, be readily obtained and be widely employed. The extensive use of the hand magnet is testified to by the large number one maker alone has supplied. The large magnet is very costly, not portable—one account giving the weight as 600 lbs.—and it must, therefore, be necessarily possessed chiefly or only by hospitals, and of these, almost entirely by those situated in large industrial centres. For these reasons, it is my opinion that the value of the hand magnet should always be set forth whatever be the views of those employing the large magnet.

REFERENCES.

Reference has been made in the foregoing article to the following of my papers:—

The Electro-Magnet and its Employment in Ophthalmic Surgery.—(*Churchill*) 1883.

Foreign Body (piece of steel) embedded close to optic disc with retention of perfect sight.—*Royal Lond. Ophth. Hosp. Reports*, Vol. IX (1879), p. 370.

On the Employment of the Magnet and Electro-Magnet in the removal of Iron and Steel Fragments from the interior of the eye.—*British Medical Journal*, Vol. I (1881), p. 843.

(†) *Royal London Ophth. Hospital Reports*, Vol. XV.

- The Magnet and Electro-Magnet in Ophthalmic Surgery.—*British Medical Journal*, Vol. II (1883), p. 957.
- The Employment of the Electro-Magnet in Ophthalmic Surgery. Additional cases.—*British Medical Journal*, Vol. I (1885), p. 884.
- Foreign Bodies in the back of the eye (retina and vitreous) and preservation of sight.—*Trans. Ophth. Society* (1886), p. 407.
- On Closure of Sclerotic Wounds by suturing the conjunctiva.—*Trans. Ophth. Society* (1887), p. 291.
- Some Points of Progress in Ophthalmic Surgery.—*British Medical Journal*, Vol. II (1889), p. 57.
- The Employment of the Electro-Magnet in Ophthalmic Surgery. Additional Cases and Remarks.—*British Medical Journal*, Vol. II (1890), p. 1055.
- Foreign body in Vitreous, located by the x-rays, and removed by the Electro-Magnet.—*Trans. Ophth. Society* (1898), p. 218.
- Fragment of Steel removed from Retina by Electro-Magnet, with retention of excellent sight.—*Trans. Ophth. Society* (1898), p. 221.
- On Removal of a Fragment of Steel from the Retina with the Electro-Magnet. With Notes of Two Cases.—*British Medical Journal*, Vol. I (1899), p. 335.

**DIXIÈME CONGRÈS INTERNATIONAL
D'OPHTALMOLOGIE À LUCERNE 3ème LIVRAISON
DU RECUEIL DES TRAVAUX. Section A.**

Third part of the Report on papers read at the 10th International Congress of Ophthalmology, held at Lucerne, September, 1904.

(*Concluded.*)

The Report contains two other articles bearing on the same subject; the first of these is by Dr. Thomas Axenfeld of Freiberg, in Bavaria, and is entitled "Accidental Lesions in Ophthalmic Surgery," the second is by Dr. H. V. Würdemann, of Milwaukee, Wisconsin, U.S.A., on "Loss of Vision from Accidents, and its relation to the earning ability."

The conclusions arrived at by Prof. Axenfeld are that the percentage estimate of the value, in an industrial point of view, of an injured eye, can at best only be approximately given by the expert, and may perhaps be most appropriately expressed by such terms as "slight," "moderate," and "severe," and the object in view should be not the award of a pension for the injury in its worst possible form, but to

supply to the sufferer a kind of assistance of the nature of a provident help to whatever wage he may be able to earn. The industrial value of an injured eye cannot, and should not, be estimated on a purely theoretical and mechanical basis. The statistical method is not, in this case, applicable, on account of the very great variations in the ultimate wage-earning capacity that follows recovery from the same lesion in different trades and persons. The industrial acuity of vision from a purely optical point of view for the higher occupations, is found to vary from $S. = 0.75$ (or $\frac{3}{4}$), to $S. = 0.15$ (or $\frac{1}{6}$), and for lower classes of occupation, from $S. = 0.5$ (or $\frac{1}{2}$), to $S. = 0.02$ (or $\frac{1}{50}$). Prof. Axenfeld thinks the pension for the loss of one eye should be about 30 per cent. of the previous wage. Slight disturbances which do not interfere with stereoscopic vision ($S. = \frac{1}{10}$), require no pension. Those who have one eye injured when young should receive less compensation than older workmen, since they have the opportunity of learning another trade.

The article which possesses most interest to an English reader is undoubtedly that by H. V. Würdemann, entitled "Loss of Vision from Accidents." This author has made a special study of the subject, has published a treatise upon it in conjunction with Prof. Magnus, and has taken the trouble to write to the authorities of no less than 55 accident and assurance companies, inquiring what were the rules for indemnity in the case of loss of both eyes, and of one eye, whether cosmetic damage was recognised, the amount allowed, and the length of time over which the payment extends, and, lastly, whether the rates were estimated from experience—that is to say, empirically—or from statistics. Würdemann remarks incidentally that it is astonishing how closely the amounts empirically allowed by these business corporations correspond to the deductions drawn by Magnus and himself from a profound and long-continued enquiry. All societies hold that the loss of both eyes is entitled to the maximum payment. It is equivalent to death in arresting all lucrative employment. Yet it must be admitted that although the sufferer may be no longer capable of practising his own trade, as for example, an engraver, he may still gain some, though a greatly reduced, wage by piano tuning, basket and brush making, massage, and many other employments.

It is when one eye only is completely or partially lost that difficulties in regard to compensation arise.

In his own practice, which is carried on in Milwaukee, a populous manufacturing town of the United States, containing 325,000 inhabitants, 10 per cent. of ophthalmic cases consulted him on account of accidents to one or both eyes, and the registers

of a large iron company in Pennsylvania gave about the same proportion. Mr. Simeon Snell, of Sheffield, England, consulting the books of the Miners' Permanent Benefit Fund, found that out of a total of 48,262 accidents, the percentage of eye cases was 5.19, by far the most numerous and severe accidents occurring amongst the steel and iron workers. Cohn, again, found that every one of 1,283 workers in metal examined by him, suffered two or three times a year from injuries to the eyes. In the war of the Rebellion 29 per cent. of all injuries affected the eyes. In cities and towns where there are great manufacturing industries, accidents to the eyes are very frequent, and though great care is usually taken to protect the workman from these and general injuries, insurance societies have been formed, the rules of which for the compensation of bodily injuries have been founded partly on experience, partly on expert evidence, partly on precedent, and partly on loss of wage-earning power.

Dr. Würdemann has arranged the various occupations of life in two groups. The first comprehends all those in whom the range of visual acuity is greater, requiring from 0.75 ($\frac{3}{4}$), to 0.15 ($\frac{1}{7}$) of the normal, such, for example, as the higher professions, fine mechanicians, those pursuing the linen, cotton, and silk industries, seamstresses, printers, and the Services. The second group, from 0.50 ($\frac{1}{2}$), downwards to 0.50 = $\frac{1}{20}$, include builders, brickmakers, labourers, employés in gas and water works, and many others, but he points out in arbitrating, it must always be borne in mind that individual members of certain trades do not have exactly the same demands made upon their visual powers. He strongly insists upon the fact that practical visual acuity and the scientific standard are entirely different things, and that an individual may have for working purposes a full amount of vision, yet who by the scientific standard shows a deficit. If we wish therefore to estimate with exactitude the damage to the individual case, we must calculate the compensation on the basis that the individual himself has been getting and his probable future earnings.

HENRY POWER.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—CONGENITAL ANTERIOR STAPHYLOMA.

- (1) Gallenga, C.—A contribution to the knowledge of opaque Congenital Staphylomata of the cornea, resulting from Intra-uterine Keratitis. (Contributo alla conoscenza delle ectasie opache congenite della cornea de chertite intra-uterina.) *Archivio di Ottalmologia*, 1903, V. II, Fas. 1-2, p. 2.
- (2) Parsons, J. Herbert.—Congenital anterior staphyloma. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 47.
- (3) Nettleship, E.—Two cases of congenital staphyloma of the cornea. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 63.

(1) Congenital staphyloma of the cornea must be rare, since the literature contains only about twenty cases. Gallenga discusses these cases, and then reports one of his own of bilateral, intra-uterine keratitis with staphyloma of the right eye in a child affected with hereditary syphilis. The results of the microscopical examination he gives in detail, the eye having been enucleated at the age of fourteen months. From the clinical facts and pathological observations related by others and observed by himself, Gallenga concludes that, in a certain number of cases, there is not a true irido-corneal staphyloma following ulcer and perforation of the membrane, but rather an ectasia of the cornea consecutive to an intra-uterine irido-choroiditis. Intra-uterine keratitis is secondary to a pathological process of the uveal tract, especially of its anterior part, and it assumes the character of the so-called "internal ulcer of the cornea" described by v. Hippel.

Amongst the pathological details recounted by Gallenga we may notice the very advanced atrophy of the anterior part of the uveal tract and of the pigmentary elements of the entire choroid. It is probable that such an eye, without the profound changes of the anterior segment, would later show pathological albinism, on which the reviewer has insisted when describing the rudimentary stigmata of hereditary syphilis.

A. ANTONELLI.

(2) Parsons describes the case of a child, *ætat* 3 days, affected with staphyloma, noticed at birth. The left eyeball was the seat of a complete anterior staphyloma, projecting half an inch beyond the eyelids. The iris was adherent to the pseudo-cornea, which was so thin as to be almost trans-

parent. In the mucous discharge from the affected eye staphylococcus albus was found. After excision, the globe was seen to be shaped like an hour-glass, and was found to measure 22 mm. from front to back, and 12 mm. from side to side. The staphyloma itself measured 10 mm. from its anterior pole to the groove in the sclera. *Macroscopic examination* of the divided globe yielded the following results: anterior staphyloma extremely thin, composed of iris and covered with a transparent membrane. Its sides were thicker, and consisted of cornea, lined by adherent iris. Posterior chamber and vitreous contained yellow material. Lens, retina, and choroid in place. *Microscopical examination*:—The cornea at the sides consisted of well-marked substantia propria, covered with stratified epithelium. Bowman's membrane absent; Descemet's membrane intact on each side for a distance of 1 mm. The epithelium stopped short 2 mm. to 3 mm. in front of the sulcus. Anterior to this, the substantia propria was densely infiltrated, and quickly became narrowed to a thin membrane. The thin membrane, forming the whole of the dome-shaped projection, consisted of several layers of nuclei, without any epithelium on the surface. Internal to these layers was, first, an almost homogeneous layer, and, then, the iris, reduced to distorted pigmented epithelium. A fibrinous coagulum, richly infiltrated with polymorphonuclear leucocytes, occupied the posterior chamber. The lens showed leucocytes between the anterior cortical fibres, and also in front of its ruptured anterior capsule. Ciliary body, vitreous, retina, choroid, and optic nerve were infiltrated with polymorphonuclear leucocytes. Briefly, then, the eye was in a condition of commencing panophthalmitis, and would doubtless soon have gone on into rupture and phthisis bulbi. Commenting upon the foregoing and other recorded cases of congenital staphyloma, Parsons points out that they all manifest the same pathological features as when the condition develops in the usual way after birth. The same cause therefore may be responsible for both conditions. That, however, implies an intra-uterine perforation of the cornea, the acceptance of which possibility offers considerable difficulty. Endogenous infection is improbable, but exogenous infection, as from the amniotic fluid, is more likely. It is known that certain diseases, as anthrax, tubercle, typhus, and glanders, and certain infections, as pneumococcus, streptococcus, and staphylococcus aureus, can be transmitted from the mother to the foetus. The possibility that infection could have occurred at birth or *per vaginam* during parturition is thought by Parsons to be extremely unlikely. The alternative view, that the staphyloma is the outcome of maldevelopment, is

dismissed as inadequate to explain the inflammatory changes present in this and in some other cases. Again, it would not account for the vascularisation of the cornea found in some cases nor for the absence of epithelium from the surface of the pseudo-cornea. Parsons considers that there has been a tendency in England to overlook the importance of intra-uterine inflammation as a cause of congenital anomalies of the eye.

(3) **Nettleship's** two cases of congenital staphyloma are briefly as under. *Case No. 1.*—A lad, first seen when 10 years of age, had no perception of light in one eye, the cornea of which was represented by an oval semi-opaque patch, smaller than the cornea of the other eye. There was a small partial staphyloma at the lower part of the ciliary region. The condition was stated to have been present at birth. The eye was excised, and found to present much the usual macroscopical characters. No measurements and no microscopical examination made. *Case No. 2.*—A female, first seen when aged 10 months, presented a large, circular, white patch involving the lower third of one cornea and the neighbouring ciliary region. Its central part was more prominent than the rest of the structure. The iris was stretched towards the opacity. The anterior chamber was shallow. The lower part of the pupil was hidden by the staphyloma. Baby delivered with instruments, and opacity of eye observed the day after birth.

II.—OXYCEPHALY.*

- (1) **Tucker, Captain E. F., I.M.S.**—A case of ocular defects associated with congenital deformity of the cranium (oxycephaly.) *Lancet*, July 9, 1904.
- (2) **Morax and Patry.**—Blindness and cranial deformity. (Cécité et déformation crânienne.) *Annales d'oculistique*, août, 1904.
- (3) **Velhagen, Karl.**—Upon "Tower-skull" and atrophy of the optic nerve. (Ueber Turmschädel und Sehnerventrophie.) *Münch. Mediz. Wochenschrift*, 2 August, 1904.
- (4) **Taylor, James.**—Case of congenital proptosis and meningocele. *Reports of the Society for the Study of Disease in Children*, Vol. IV, 1904, p. 176.
- (5) **Uhthoff, W.**—Upon marked exophthalmos in deformities of the skull. (Ueber hochgradigen Exophthalmus bei Schädeldeformität.) *Klin. Monatsbl. f. Augenheilk.*, Januar, 1905.

*For recent cases, see THE OPHTHALMOSCOPE, Vol. I., p. 114. Vol. II., pp. 102 and 233.—EDITORS.

(1) **Tucker** reports a case of oxycephaly in a Mahratta, 20 years of age. No family history of cranial deformity. The patient was intelligent, his sight and hearing were good, and he was of normal height, build, and development. The cranium showed a projection in the form of a ridge from the centre of the vertical portion of the frontal bone to the central point of the vault, which was situated one-and-a-half inch in front of a line drawn perpendicularly upwards from the external auditory meatus. The measurements of the head and face were as under: horizontal circumference, 49½ cm.; naso-occipital arch, 34 cm.; binauricular arch, 34 cm.; height of the orbits, 4½ cm.; breadth of the orbits, 5 cm.; transverse diameter, 12.2 cm.; antero-posterior diameter, 16.2 cm.; suboccipito-frontal, 16.2 cm.; distance between the two external angular processes, 11.4 cm.; height of the frontal bone, 11.8 cm. The cephalic index was therefore 75.3. The palate was high and arched, and met at the uppermost part in a deep sulcus. Slight genu valgum. Exophthalmos, increased by pressure on lids. External strabismus, especially as regards the left eye. Retinal veins somewhat tortuous. Movements of eyeballs impaired in certain directions. Tucker's communication is illustrated by two photographs of the patient.

(2) At a meeting of the *Société d'ophtalmologie de Paris*, held on July 5th, 1904, **Morax** and **Patry** exhibited photographs of seven patients, all of whom suffered from post-neuritic optic atrophy and a characteristic cranial deformity. The papilla was white with irregular outlines, and the visual acuity was *nil* or reduced to quantitative sight. In all the cases blindness had commenced before the patients had reached 10 years of age, and had evolved somewhat quickly in about three months. Nystagmus was a constant sign. In these cases the cranium was high. It was also relatively narrow, the face being often asymmetrical and elongated vertically. In two of the cases exophthalmos was very marked; the eyes were invariably prominent, the frontal bosses effaced, and the superciliary arches little pronounced. There was frequent headache in four of the patients. Six of the sufferers belonged to the male sex. The authors contrast their cases with the 42 already published by other observers. The etiology of the condition is still unknown. The deformity of the skull, known as "*crane en forme de tour*," is attributed to a premature ossification of the coronal suture (Virchow), and the papillary atrophy to contraction of the optic foramen (von Michel, Manz, Ponfick), to an augmentation of the intracranial pressure (Friedenwald), or to meningitis and especially pachymeningitis (Virchow, and then Hirschberg and Goldzieher). It is probable that the same cause may determine

both the precocious synostosis and the neuritis, and it would be advisable to study the affection at the beginning, in order to decide upon the nature of the symptoms, meningitic or otherwise, presented by the patients. This is the chief reason why Morax and Patry now draw attention to this characteristic type of disease, of which at present we know only the ultimate consequences. The affection is unquestionably much more common than would be supposed from the small number of published cases.

H. de V.

(3) **Velhagen**, of Chemnitz, has an important communication upon "tower-skull," and especially upon its connection with affections of the optic nerve. He adduces three examples of the condition which have come under his notice. Briefly, the facts of his cases are as follows :

Case No. 1.—A female, aged 23 years, had been affected with exophthalmos, nystagmus, and external strabismus since early life. The deformity of the skull was noticed when she was born. When she was of an age to attend school, sight was found to be defective. Upon examination, R.V. (corrected), 5/20 to 5/15 ; L.V., fingers close to eye. Optic atrophy—complete in left and incomplete in right eye. Retinal vessels tortuous. Alterations present in visual fields, especially in that belonging to the left eye. Patient's mother had a very high forehead. *Case No. 2.*—A girl, 6 years of age, had suffered from headaches for some weeks, during which time the eyeballs had become prominent and the sight had failed. Upon examination, R.V., hand movements ; L.V., no perception of light. There existed pronounced exophthalmos, along with paralysis of the right and paresis of the left external rectus muscle. These signs and symptoms, accompanied, as they were, by "choked discs," led to a diagnosis of an intracranial neoplasm. In the course of a few weeks, however, the discs had become white, and the other symptoms had undergone modification. Under these circumstances Velhagen thought that the symptoms might depend upon the curious deformity of the skull presented by the child, a supposition subsequently found to be correct. The skull, it may be added, was stated to have assumed its peculiar shape when the patient was one year of age. *Case No. 3.*—A man, aged 17 years, presented the symptom-complex of white optic discs, slight exophthalmos, and "tower-skull." Vision (corrected) R., 5/6, and L., 5/10. The patient was one of seven children, of whom a sister manifested slight indications of *Turmschädel*.

Commenting upon the above cases Velhagen points out that oxycephaly is not common. There is no general agreement with regard to the anatomical conditions present in such cases, although everybody admits that the most marked

clinical sign is abnormal height of the skull, hence the name "tower-skull," "steeple-skull," or "*Turmschädel*." The average height of four such skulls in the Heidelberg Museum was found to be 143 mm., as compared with 131.6 mm., the average of 100 normal skulls. The orbits of the former measured 28.4 mm., as against the average depth of 39.05 mm. These deformed skulls are also smaller as regards the base, and are shorter from before back. Virchow's view was that the deformity of the "tower-skull" was due to premature ossification of the sutures between the parietal bones and the occipital and temporal bones, resulting in a compensatory development involving the anterior portion of the cranium. In "tower-skull" the patients may be unusually intelligent, since the brain accommodates itself to the shape of the skull, without suffering in the process. As to the optic neuritis associated with the oxycephaly, it is not unreasonable, Velhagen thinks, to suppose that the one has the same origin as the other. The condition of the cranium is generally congenital, and Velhagen suggests that it may possibly be explained by intra-uterine rickets. The autopsies of Michel and Ponfick show that the optic foramina may be narrow enough to compress the optic nerves, but such a condition is not usual.

MAX P.

(4) **Taylor's** patient was a lad, aged 5½ years, whose eyes had always been prominent. He presented an oxycephalic skull, an occipital meningocele, proptosis, squint, nystagmus, and defective mental condition. His sight had recently become much impaired, as the result of atrophy of the optic discs.

(5) **Uhthoff** describes several instances of pronounced exophthalmos in association with "tower-skull," and hydro-

Fig. 1.



Fig. 2.



cephalus internus and externus. The case of "tower-skull"—*Turmschädel*, to use the German equivalent—occurred in a boy, 15 years of age, who was weak-minded, had been blind from early life, and who manifested a deformity of the ear (see Fig. 1). His left eye was blinded from keratitis e lagophthalmo, although still prominent, while his other eye was extremely prominent, and by slight pressure could be dislocated in front of the lids (see Fig. 2), and had lost all sight, owing to post-neuritic optic atrophy. Uhthoff remarks that bilateral blindness is not common in this cranial deformity. He discusses at some length the pathogeny of the affection of the optic nerve now and then present in oxycephaly.

S. S.

III.—AFFECTIONS OF THE EYELIDS.

- (1) Chevallereau, A., and Chaillous, J.—Upon spasmodic retraction of the upper eyelids. (*Sur la rétraction spasmodique des paupières supérieures.*) *Annales d'oculistique*, T. CXXIX (1903), p. 247.
- (2) Delamare and Conor.—A case of permanent tonic blepharospasm of hystero-traumatic origin. (*Observation de Blépharospasme tonique permanent d'origine hystéro-traumatique.*) *Recueil d'ophtalmologie*, XXV (1903), p. 4.
- (3) Polignani, L.—Epithelioma of the internal angle of the left eye propagated to the adjacent parts. (*Epithelioma dell' angolo interno dell' occhio sinistro, diffuso alle parte prossime.*) Tocco, édit., Naples, 1903.
- (4) Schirmer, Otto.—On paralysis of blinking and closing the lids movements, together with a contribution to the study of the flow of tears. (*Ueber Lidschlaglähmung und Lidschlusslähmung zugleich ein Beitrag zur Lehre von der Thränenabfuhr.*) *Zeitschr. f. Augenh.*, Feb., 1904.
- (5) Pegoraro, G. R.—A contribution to the study of palpebral favus. (*Contributo allo studio del favo palpebrale.*) *Archivio di Ottalmologia*, Vol. XI., Fasc. 7-8, Jan.-Feb., 1904.
- (6) Birch-Hirschfeld, A., and Kraft, Oscar H.—On morbid conditions of the eye in acanthosis nigricans. (*Ueber Augenerkrankung bei Acanthosis nigricans.*) *Klin. Monatsbl. f. Augen.*, März, 1904, p. 232.
- (7) Fairbanks, Arthur Willard.—Hereditary œdema. *American Journal of the Medical Sciences*, May, 1904.

- (8) **Terson, A.**—Palpebral dermatolysis. (*Dermatolysie palpébrale.*) *Archives d'ophtalmologie*, juin, 1904, p. 346.
- (9) **Jurnitschek, F.**—A case of syphilitic tarsitis. (*Ein Fall von Tarsitis syphilitica.*) *Zeitschrift für Augenheilkunde*, August, 1904.
- (10) **Sommer, G.**—Upon primary melanosarcoma of the eyelids. (*Ueber das primäre Melanosarkom der Augenlider.*) *Woch. f. Therapie u. Hygiene des Auges*, 22 September, 1904.
- (11) **Pes, O.**—On acute phlegmonous gangrene of the lid. (*Ueber die akute gangränöse Phlegmone der Lider.*) *Zeitschrift für Augenheilkunde*, September, 1904.

(1) **Chevallereau and Chaillous** report two cases of spasmodic retraction of the upper eyelid. The facts are briefly as follows. *Case 1.*—A woman, aged 42 years, manifested a tonic contraction of the levator of each upper eyelid, which failed to disappear either during sleep or under general anæsthesia. As each upper eyelid was rolled in upon itself, the appearance was most peculiar. No cause could be ascertained for the condition, which was of long-standing. *Case 2.*—A man, aged 46 years, presented a retraction of the left upper eyelid, which had existed from birth. The difference between the two eyes was so marked that ptosis seemed to exist upon the right side. Graefe's sign was present in the affected eye.

H. de V.

(2) A young soldier who had suffered from "night terrors" in infancy, received a slight blow upon his left eye, an accident at once followed by blepharospasm of that side. After getting well, the condition recurred after a trivial injury by cinders getting into the eye. When examined by **Delamare and Connor**, there was persistent blepharospasm, and anæsthesia of the conjunctiva. V.=1/20. Visual field could scarcely be said to exist. The pharyngeal reflex was absent. There were numerous zones of anæsthesia about the body, particularly upon the left side, analgesia of the upper extremities, and other signs of hystero-epilepsy.

H. DE V.

(3) **Polignani's** patient, a female aged 63 years, exhibited a vast ulcerated cancrroid of the internal angle, of a part of the upper lid, of a part of the surface of the nose, and of the whole of the lower eyelid. After a generous excision and curetting of the base, the wound was covered by two large strips, one from the frontal, and the other from the zygomatic region. The globe of the eye was uninjured. The permanent results were very satisfactory, without any sign of relapse after two

years. The histological examination of the specimen revealed a typical cutaneous epithelioma.

A. ANTONELLI.

(4) **Schirmer** cites three cases in proof of his theory that the outflow of tears from the conjunctival sac into the nose is caused solely by the contraction of the lacrymal part of the orbicularis palpebrarum muscle (Horner's muscle), which takes place in the blinking movements which we are constantly carrying out. He holds that neither gravity, nor capillary attraction, nor aspiration through the nose has anything to do with it, but that Horner's muscle by its contraction causes a dilatation of the lacrymal sac, which thus aspirates the fluid into itself (the lower end of the nasal duct being guarded by a valve).

In the first case a student received in the course of a duel a deep sword-cut across the cheek, which just escaped the trunk of the facial nerve, and shortly after the healing of the wound, he became much troubled by constant overflow of tears. A careful examination showed that the tear-passages were quite patent, that the punctum was closely applied to the globe in an absolutely normal position, but that no tears passed down, as evidenced by the fact that a drop of fluorescein did not appear in the nose, whereas on the other side it appeared in the course of a minute. There was no paralysis, except that of Horner's muscle, and that part of the orbicularis which is just at the edge of the lids, as evidenced by the smoothness of the skin at the lid margins when the lids were closed, and the absence of the drawing over towards the nose of the lower lid margin, which alone is responsible for the overflow of tears. The second case was that of a child, 13 years of age, suffering from Erb's muscular atrophy, affecting principally the shoulder girdle and facial musculature. The overflow of tears had lasted a long time. The lids were quite normal, and the punctum was in a normal position. The attempt to close the lids completely was unsuccessful, for a slight interval, about 2 mm., remained. Horner's muscle in this case still possessed a very slight power of contractility—it was more the orbital portion of the orbicularis that was paralysed, and consequently there was still some power of carrying off the tears, but which is insufficient when this becomes excessive. The third case was one of paralysis of the orbital portion of the orbicularis and of the larger part of Horner's muscle—and, accordingly, the mechanism was insufficient to deal with the flow of tears when the latter was at all increased, as by reading or exposure to the wind.

Schirmer arrives at the conclusion mentioned in the beginning, namely, that the flow of tears normally depends

upon the action of Horner's muscle. If this muscle be paretic, as in cases 2 and 3, then the flow is not so rapid, and only small quantities can pass on; if it be totally paralysed, as in case 1, there can be no flow of tears onwards into the nose at all.

A. LEVY.

(5) From a personal case of favus of the eyelid and the eight cases recorded in ophthalmological literature, **Pegoraro** concludes that this affection is as frequent in young people as in adults, that it attacks the upper lid as frequently as the lower, and preferably the delicate skin of the palpebral surface itself, and not the edges of the lids. On the other hand, in the rare cases of palpebral trichophytis, examination under the microscope has shown the affection of the lashes, in spite of the resistance offered by the latter to parasitic invasion, in comparison with the other hairy parts of the economy. Moreover, the achorion prefers to vegetate on the surface of the tissues, and the failure of the eyelid to participate more often in favus of the scalp or of the face is probably due to the greater mobility of the palpebral skin, which easily drives away dust, spores, or infectious elements.

A. ANTONELLI.

(6) *Acanthosis nigricans* is a very rare disease, indicated by three cardinal symptoms: (1) characteristic localization (skin of neck, breast, navel, etc.), (2) hypertrophy of the papillæ of the skin, and (3) abnormal pigmentation. The eyelids are frequently involved, the conjunctiva rarely so. **Birch-Hirschfeld** and **Kraft** give particulars and description of a case which came under their observation, in a patient of 68 years, suffering from carcinoma of the stomach. The margins of the lids presented a remarkable appearance through the presence of numerous papillæ which in the region of the caruncula formed large swellings and insulated the cornea. The conjunctiva of the lids was also covered with papillæ. Microscopical examination of an excised portion manifested characteristics of *condyloma acutum*. A review of the cases on record is appended.

A. BIRCH-HIRSCHFELD.

(7) **Fairbanks** traces very fully the history of the curious affection known as hereditary œdema, which is of some interest from an ophthalmic point of view, since the eyelids are not infrequently attacked. The characteristics of the malady, as is well-known, are recurrent attacks of acute œdema in various portions of the body, usually of rapid development and brief duration, and often associated with disturbance of the gastro-intestinal tract. The influence of heredity is often extremely marked, and there can be no

serious doubt as to the ultimate neurotic nature of the affection. There are, besides, other cases which are as slow in their development and as sluggish in their course as the forms just described are acute and transient. The former disease may end fatally from œdema glottidis.

(8) **Terson** describes three instances of that curious relaxation of the skin of the upper eyelid named by Fuchs "blepharochalasis," and adds a brief review of the literature of the disease. He identifies the condition as a variety of those cutaneous affections known collectively as "dermatolyses," of which dermatologists have already described a form affecting the eyelids (palpebral dermatolysis). Examination of the skin excised from these cases has shown an atrophy of the dermis and of the elastic fibres, the vessels being more or less varicose, a series of changes probably due to trophic disturbances of the sympathetic nerve. The actual loosening of the skin, which forms the characteristic feature of the cases, is due, according to Terson, to an atrophy and relaxation of the numerous inter-digitations formed between the levator muscle and the deep surface of the skin of the upper eyelid. With regard to the treatment of pronounced cases, the superfluous skin must be resected, and the skin-wound sutured to the suspensory ligament and to the summit of the tarsal plate.

S. S.

(9) **Jurnitschek** recounts in detail an interesting case of tarsitis in a female patient, 38 years of age. The diagnosis of syphilitic tarsitis rested upon the form of the inflammation, its slow development, various glandular enlargements, and some ill-defined bone pains, for there were no other signs of syphilis, either hereditary or acquired. All four lids were involved, the upper ones more than the lower ones. They were thickened, œdematous, and a cartilagenous tumour could be felt to occupy their whole length. The skin could be moved about over the swellings. The treatment consisted of mercurial inunctions and, locally, hot fomentations, under which the condition rapidly improved, and patient left the hospital quite cured. The difficulty in this case consisted in making the diagnosis, which was arrived at by excluding all other agents producing similar disturbance.

A. L.

(10) **Sommer** believes primary melanosarcoma of the eyelids to be an extremely rare disease, since in German literature he can find two reports only of the condition. He now describes such a case in a woman, aged about 82 years, associated with violent and repeated hæmorrhage from the growth. The latter was of dark-brown colour, had the size of a hazel nut, and was situated upon the temporal half of the right

upper eyelid. The neighbouring glands were not involved. The diagnosis of melanosarcoma was confirmed microscopically.

MAX P.

(11) **Pes** deals principally with those cases of gangrene of the lids, which follow traumatism, or are idiopathic, where the seat of entry of the organism cannot be discovered. He recounts several cases, in all of which careful bacteriological examinations were made. He found streptococcus in one, and staphylococcus aureus in another case; there was a negative result in the third case. In reviewing the literature of the subject Pes finds that the only other organism capable of producing this condition is the diphtheria bacillus. Several cases of mixed infection are also reported.

A. LEVY.

VI.—TRACHOMA.

- (1) **Hoppe.**—What verdict should be given as to the State measures at present in vogue in Prussia for the extirpation of trachoma? (Wie ist das gegenwärtige System staatlicher Trachom-Bekämpfung in Preussen zu beurtheilen?). *Centralbl. f. prak. Augenheilkunde*, August, 1903.
- (2) **Wright, Ruffin A.**—Sub-tropical trachoma: with special relation to a new remedy in its treatment. *Journal of the American Medical Association*, August 8, 1903, and *American Medicine*, August 15, 1903.
- (3) **Claiborne, J. Herbert.**—Treatment of trachoma. *Medical Record*, August 8, 1903, and *American Medicine*, August 15, 1903.
- (4) **Ripperger, A. A.**—Some observations on trachoma. *American Medicine*, October 10, 1903.
- (5) **Chedoudi (Cairo)**—Treatment of granular conjunctivitis by scarification and brossage. (Traitement de la conjonctivite granuleuse par les scarifications et le brossage.) *La Clinique Ophthalmologique*, 25 novembre, 1903.
- (6) **Abadie, Charles.**—A few reflections on the same subject. (Quelques réflexions sur le même sujet.) *Ibidem*.
- (7) **Marbaix.**—Granulous ophthalmia at Tournai. (L'ophtalmie granuleuse a Tournai.) *Bull. de la Société belge d'ophtalmologie*, mai, 1904.
- (8) **Stevenson, Mark D.**—A simple instrument for removing the granulations in trachoma. *Ophthalmic Record*, August, 1904.

- (9) **Mayou, M. S.**—Xerosis of the right cornea following trachoma. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 39.
- (10) **Herbert, Major H.**—Trachomatous pannus and associated corneal changes. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 67.
- (11) **Cohn, Hermann.**—The cure of trachoma by radium. (Die Heilung des Trachom durch Radium.) *Berliner klin. Wochenschr.*, No. 1, 1905.

(1) It appears that since the year 1896 measures have been adopted by Prussia for the prevention of trachoma. For example, special attention has been paid to the eyes of school children and of conscripts; severe cases of trachoma have been sent to hospital; mild cases have been able to obtain medical assistance free; and medical men have been appointed to supervise the treatment of the disease in each district. 350,000 marks have been annually appropriated towards the expenses attending this crusade. If the results thus far obtained appear to be small, **Hoppe** points out that three great drawbacks to success have up to now existed, *viz.*:—(1) too scanty a vote of money; (2) inadequate means of treating sufferers from trachoma; and (3) insufficient coercion by the State. **Hoppe** discusses these points one by one, and calls for the erection of special hospitals for the treatment of trachoma, where scientific investigations into the etiology of the disease could be carried out. The help of the laity is also, in **Hoppe's** opinion, essential for the extirpation of the disease. Examination, isolation, and treatment should be made compulsory.

ANNIE T. BARNARD.

(2) **Wright** has seen cases equal in severity to the common European type only among the Polish Jews in America. He has never seen a true case among negroes. The disease is becoming more prevalent. Health boards should take steps to control its further spread. After seven months' trial of copper nitrate, he recommends its use for the reason that it causes absorption of the granulations and hypertrophied papillæ as rapidly as other applications, with less irritation of the lids and less pain; consequently patients will use it regularly in home treatment. He usually begins with a 5% ointment, but the majority will tolerate a 10% strength as soon as excessive secretion has been allayed by a silver salt. Bed-time is best for the application, although patients can go about their usual pursuits a few minutes after it is rubbed in.

(3) **J. H. Claiborne** describes the non-inflammatory form with discrete sago-like grains on both lids, and the inflammatory form beginning with lacrymation, photophobia, and much

discharge followed by granulations, which later coalesce, followed by cicatrization and pannus. Among medicinal remedies, copper sulphate stands pre-eminent. Much can be done to prevent pain in its application by delicacy of manipulation and by wiping away the excess. In the non-inflammatory form, surgical treatment gives the most brilliant results. Knapp's forceps are the best instrument for "expression." The writer describes a modification of these. The cylinders, instead of being fluted, have parallel lines of roughened elevations. These rupture the surface of the granules and allow of easier expression, thus requiring less force and causing less bruising. It is valuable in the inflammatory form when the granules are definite. When the granular stage has passed, copper sulphate, with or without other remedies, is indicated.

(4) After pointing out that for about a year an epidemic of trachoma has prevailed in New York, **Ripperger** states that in certain parts of the city 25% of the scholars have been found to be affected. Indeed, by far the greater number of patients comprised school children of various ages. This frequency of trachoma is to some extent attributable to foreign immigration. Most of the sufferers belong to the poorer class from tenement houses crowded to their utmost capacity. **Ripperger** confirms the current view that extension of the disease is particularly promoted by uncleanness and the herding of people under unhygienic conditions. As regards the malady itself, there is an almost complete absence of subjective symptoms. The granulous form is that usually met with. The diagnosis in most cases is easy. The author pleads for individualisation in the treatment of trachoma. In the milder cases, a 2% solution of protargol is recommended for home-use, and under this treatment children are enabled to return to school after four to six weeks. The more severe cases are treated by surgical measures, especially by "expression."

(5) **Chedoudi** is a great upholder of the treatment of trachoma by scarification and brossage, which, in his hands, has given excellent results.

(6) **Abadie**, in referring to the above note by his pupil, **Chedoudi**, points out that the cause of failures by this method (first described by himself and **Darier** twelve years previously) is a wrong conception of the method. He emphasizes the importance of making deep *horizontal incisions* in the *cul-de-sac only*, which latter has to be brought into view by an almost brutal rolling of the lid over *forci-pressure* forceps.

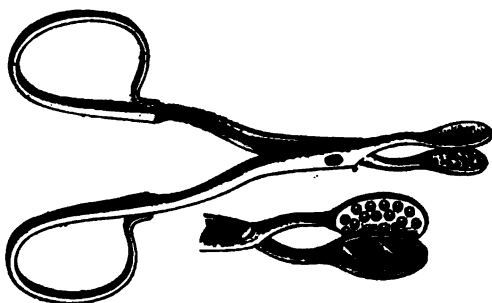
W. ERNEST THOMSON.

(7) With regard to the prevalence of trachoma at Tournai, **Marbaix** makes the following suggestions: (1) the institution

of an "ophthalmic ambulance"—that is to say, a kind of *crèche* where children can stay from 8 a.m. to 5 p.m. daily, receiving good food and medical treatment ; (2) the instruction of the population as to the nature and dangers of the disease ; (3) giving to patients the necessary means of cure ; and (4) the examination of the eyes of all applicants for employment in workshops, factories, etc.

H. DE V.

(8) **Stevenson's** forceps, as shown by the illustrations, have two blades, one solid and the other perforated by a number of round holes, the edges of which are sharp. The



perforations should be at least 2 mm. in diameter, and be drilled as close together as possible, in order that the sharp, narrow intervening portions may readily cut into the substance of the diseased eyelid.*

(9) A young man, who had been a victim to trachoma for 8½ years, developed xerotic patches in the ocular conjunctiva of one eye and on the cornea of the other. The condition showed some signs of improvement under local treatment by castor oil.

(10) **Herbert's** suggestive communication deals with trachomatous pannus as he has observed that condition amongst the natives of the East Indies. The paper (which gives evidences of marked powers of observation) must, however, be read in the original. It is illustrated.

(11) For the treatment of trachoma, **Cohn** has employed a 1 mg. crystal of radium bromide enclosed in a glass tube, 3cm. long, and 3 mm. in diameter. Every trachoma body is touched with the end of this tube, and the process is carried out daily for from ten to fifteen minutes. Three cases only have been treated in this way, but they were cured quickly, and without pain or complication of any kind.

S. S.

V.—MISCELLANEOUS.

Cirincione.—On the state of our knowledge of the development of the vitreous. (Sullo stato odierno della questione riguardante la genesi del vitreo.) *La Clinica Oculistica*, April, 1904, and *Ophthalmic Review*. Nov., Dec., 1904, and Jan., 1905.

Cirincione holds that recent investigations have confirmed the theories he had always taught about the development of the vitreous humour. According to his views, the meshwork of tissue springs from the mesoderm: not the layer present at the earliest stages between the ectoderm and the primitive optic vesicle—he has himself shown that this is completely absorbed during the progress of development—but from the mesoblast at a later stage. After the absorption of the primitive mesoderm, the space between the lens and the optic vesicle is filled with a “substance of repletion,” which is derived from the retina, and is afterwards replaced by the true vitreous.

HAROLD GRIMSDALE.

Bernheimer, S.—On the location of the centre for the sphincter pupillæ. (Über die Lage des Sphincterzentrum.) *Recueil des Travaux Xe Congrès international d'Ophthalmologie*, Lucerne, Septembre, 1904.

Bernheimer's further experiments on apes showed that the centre for the circular fibres of the iris should be looked for in a small-celled nucleus, situated on either side of the median line in the floor of the aqueduct of Sylvius, beneath the anterior third of the anterior pair of the corpora quadrigemina. Destruction of the roof of the aqueduct did not lead to any permanent pupillary changes, which proves that the corpora quadrigemina have nothing to do with the sphincter movements.

C. MARKUS.

Ahlström, Gustaf.—On the physiology of the eye movements. (Über die Bewegungsbahnen des Auges.) *Recueil des Travaux Xe Congrès international d'Ophthalmologie*, Lucerne, Septembre, 1904.

Brissaud.—Pure verbal blindness. (Cécité verbale pure.) *Nouvelle Iconog. de la Salpêtrière*, 1902, and *Arch. de Neurol.*, janvier, 1904, and *Rev. générale d'ophtalmologie*, 31 août, 1904.

At the autopsy the following changes were found in **Brissaud's** patient: softening of the left calcarine region from

obliteration of the calcarine artery, extending into the cuneus and into part of the lingual lobule; degeneration of the splenium, tapetum, and of the left optic fasciculus and of the right tapetum.

H. DOR.

Sachs, M.—On the disturbance of the eye movements through labyrinthine disease. (Ueber Labyrinthogene Störungen der Blickbewegung.) *Recueil des Travaux Xe Congrès international d'Ophthalmologie*, Lucerne, septembre, 1904.

In the case of **Sachs**' patient, the left horizontal semi-circular canal had been injured during an operation for caries of the petrosal bone. It was then found that the lateral movements of both eyes had become deficient, whereas the power of convergence remained intact. By making use of his convergence the patient replaced to a certain extent the associated lateral movements, as became evident when he was asked to fix a lateral object with both eyes. It occurred then that a strong movement of convergence took place, accompanied by contraction of both pupils, the eye which should have moved outwards turning inwards. In this way the object could at least be fixed with one eye. In order to explain this phenomenon, Sachs insists on the fact that the movement of convergence is the only one which is quite independent of labyrinthine impulses, whereas the deficiency of the lateral movements is accounted for by the lesion of the horizontal semi-circular canal.

C. MARKUS.

Werner, Louis.—A Case of Recurrent Paralysis of the Third Nerve. *Ophthalmic Review*, May, 1904.

The patient was a healthy-looking woman, aged 20 years, who had defective vision of the right eye, due to astigmatism. Since childhood she had been subject to periodical attacks of headaches and vomiting at intervals of 4 to 6 weeks. During the last three years the right eyelid had begun to droop and then to close, and this remained so for six weeks. After this the power of opening it returned, but after two years a severe attack brought it on again and diplopia developed. The eye remained closed for three weeks and again recovered. Another curious symptom was excessive salivation during the attacks.

C. D. M.

Schanz, F.—A new contrivance for the sighting of guns. (Eine neue Visiervorrichtung.) *Recueil des Travaux Xe Congrès international d'ophthalmologie*, Lucerne, septembre, 1904, and *Zeitschr. f. Augen*, October, 1904.

As presbyopic persons experience some difficulty in accommodating for the ordinary sights, **Schanz** proposes to make the sights appear at a greater distance from the eye by means of a small metal mirror placed near the end of the barrel.

He thinks that the smaller amount of the accommodation required when using this new contrivance, would also benefit non-presbyopic people in their shooting efforts.

C. MARKUS.

Peilmann, A.—On sideroscopy. (Zur Sideroskopie.) *Zeitschrift für Augenheilkunde*, November, 1904.

Peilmann describes a modification of Asmus' sideroscope which does away with the necessity of examining the deflection of the mirror by means of a telescope. It consists essentially of a strong source of light enclosed in a blackened mantle, having in front a stenopaic slit with a system of lenses which enables the streak of light reflected from the mirror to be accurately focussed on the scale at the distance of one metre. The movements of the mirror can thus be read off directly in ordinary daylight.

A. LEVY.

Hirschberg, J.—A rare operation case. (Ein seltener Operations-Fall.) *Centralbl. f. prak. Augenheilkunde*, December, 1904.

Hirschberg recounts a case of foreign body (iron) in the optic disc, which he successfully removed. The method adopted was to place the hand magnet at the temporal side of the equator of the eye, and by this means to loosen the fragment; then the half-strength of the giant magnet was allowed to act for a short time upon the same place. At this stage an ophthalmoscopic examination was made, and it was found that the fragment had disappeared from the disc, and could not be seen anywhere. It must therefore have moved over to the equator. The half strength of the giant magnet was now applied to the outer margin of the cornea; at once there was sharp pain, and the fragment could be seen behind the iris. The magnet was moved forward, and the foreign body brought through the pupil, falling into the lower part of the anterior chamber; a small incision below, and the introduction of the hand magnet, sufficed to remove it. A small hæmorrhage in the iris, which disappeared in a few days, was the only complication, and 42 days after the operation the patient was sent home with good vision and full field.

A. LEVY.

REVIEWS.

Royal London Ophthalmic Hospital Reports, Vol. XVI, part I, June, 1904.

The last volume of the *Moorfields Hospital Reports*, which bears the date of June, 1904, includes communications by Nettleship, E. T. Collins, Parsons, and George Coats. There are also several plates.

Bulletins et Mémoires de la Société Française d'ophtalmologie, 1904. Paris : G. STEINHEIL, Editeur, 2, Rue Casimir-Delavigne. Price 15 francs.

An account of the meeting of the *Société Française d'ophtalmologie*, held in May, 1904, has recently been published. A large part of the volume, no fewer than 137 pages in fact, is taken up with reports and discussions upon visual acuity in its relations to incapacity for work (see *THE OPHTHALMOSCOPE*, January and February, 1905). A good many of the remaining papers in the *Bulletins* have already appeared in periodical literature, and have been abstracted in our columns. The others will receive attention in due course.

Grundriss der Augenheilkunde. Von Dr. Charles H. May, Chef der Augen-Klinik der medicinischen Abtheilung der Columbia Universität in New York. Bearbeitet von Dr. E. H. Oppenheimer, Augenarzt in Berlin. A. HIRSCHWALD. 1903.

The translation of German works into English is a commoner thing than the reverse process. Yet here we have a German rendering of the third edition of Dr. May's little book upon diseases of the eye. The book, although unpretentious, is thoroughly trustworthy, and we entertain no doubt that it will prove as useful to German students as it has been to American and to English ones.

Lessons on the Eye for the Use of Undergraduate Students.

By FRANK L. HENDERSON, M.D., St. Louis, Mo. Third Edition. Philadelphia : P. BLAKISTON'S SON & Co. 8vo., pp. 205.

This work, written by a practical teacher, consists of twenty-eight lessons upon the more important forms of eye disease. The subject-matter selected has been that which the author has considered to be of the greatest value to the undergraduate student. Minute anatomy; the laws of catoptrics and dioptrics, with their bearings upon the ocular media; and the finer ophthalmoscopic changes—all of which he believes

belong to postgraduate instruction—have been either omitted or else sparingly considered. Such a book employed in the manner intended, subserves a most useful purpose, and can be recommended.

C.A.O.

An Atlas of Human Anatomy for Students and Physicians.—

By CARL TOLDT, M.D., Professor of Anatomy in the University of Vienna. Translated from the third German edition, and adapted to English, American, and International terminology, by M. EDEN PAUL, M.D.Brux., M.R.C.S., L.R.C.P. Vol. VI, Neurology and the Organs of the Senses. London: REBMAN, LIMITED. 1904. Price 16s.

This volume gives a very good pictorial representation of the anatomy of the nervous system, and of the organs of sight, hearing, smell, and touch. All the figures are carefully and accurately drawn, many of them are coloured, and all are more or less instructive. They will be of considerable help to the student, and will supplement his textbooks and practical work. To the practitioner this Atlas will be a convenient means of revising the anatomy of the parts mentioned when time and the lack of opportunity prevent him from doing so on the *cadaver*.

The descriptive letterpress is placed around the illustrations, the structures being indicated by dotted lines. Owing to the number of the structures labelled and the double terminology (English and Latin) the effect is somewhat bewildering, and, personally, we are not impressed with the advantages of this system.

The section on the anatomy of the eye contains 69 figures, which are, on the whole, well executed. It is to be regretted that no figure illustrating the lymph-channels of the eye has been included among them. Such a diagram might well replace Figures 1359 and 1360, which are of no particular merit and of no very evident value. The figures representing Tenon's capsule would be much more comprehensible if that structure were printed in colour. The appendix, which consists mainly of notes by the translator comparing English and German terminology, is instructive and greatly enhances the value of the book. These notes will be useful to English ophthalmologists who have to read German literature, besides being of great interest to the pure anatomist.

We can heartily recommend this volume as a trustworthy guide to the study of the anatomy of the eye. It will form a valuable addition to the library of neurologists and ophthalmic and aural surgeons.

J. JAMESON EVANS.

Die Augenärztlichen Operationen. VON WILHELM CZERMAK. Wien, 1904. VERLAG VON KARL GEROLDS SOHN, Barbaragasse.

With the issue of this instalment, the 18th and the 19th, ends Czermak's monumental treatise on ophthalmic operations, a work which was begun in the year 1893, and which extends to 1,234 pages of generous dimensions. The present section includes descriptions of complicated cataract operations, the removal of foreign bodies from the interior of the eye, and operations for detached retina, in addition to indices, and, curiously enough, a preface, dated September, 1904. In this last respect, but in no other, Czermak's cyclopædia reminds one of Lawrence Sterne's immortal "Tristram Shandy," the preface of which is to be found somewhere in the middle of the book.

Traité d'hygiène et de pathologie du nourrisson et des enfants du premier âge. Tome deuxième. Publié sous la direction du Dr. Henri de Rothschild, de Paris. Paris: OCTAVE DOIN, Éditeur, 8, Place de l'Odéon. 1905. Price 15 francs.

The second tome of Dr. Rothschild's gigantic treatise deals with diseases of the eye, nose, larynx, ear, skin, respiratory organs, heart, liver, spleen, and peritoneum, as they occur in young children. The section upon diseases of the eye, the work of Dr. Alphonse Péchin, occupies 246 pages, and is freely illustrated. It is one of the most complete treatises of the kind we have seen. It is not systematic in the sense that it attempts to describe all diseases of the eye in childhood. On the contrary, Péchin devotes considerable attention only to those affections peculiar to childhood or to those met with more frequently than at a later period of life. Some of the more important congenital malformations, as for example, persistent hyaloid artery, receive full treatment. In order to give readers an idea, however rough, of what the section contains we may glance at the chapter devoted to congenital dacryocystitis, a commonplace enough affection which receives scant and inadequate mention in the orthodox text-books of ophthalmology. After pointing out that this form of dacryocystitis may be confused with conjunctivitis, Péchin passes on to study the anatomy of the lacrymal passages in the fœtus and the baby, and, in doing this, avails himself mainly of the well-known researches of Rochon-Duvigneaud. The lower end of the nasal duct is directed towards the mesial line, and the canal straightens itself as the superior maxilla develops in height. The canal is divided into compartments, as it were, by diaphragms placed at different levels. One of the most important diaphragms forms a reduplicated fold at the lower end

of the canal. This is often imperforate, so that the epithelial *déchets* filling the canal cannot escape, and may indeed cause the membrane to distend bladder-like, a condition described by Bochdalek, nearly forty years ago, under the name of *Endblase*. Péchin thus traces stenosis to an impermeability of the lower end of the nasal duct, and if to that be added infection from any cause whatever the clinical picture of congenital dacryocystitis will result. Hereditary syphilis or tuberculosis may be the determining factor, in that it may lead to atresia or adhesions of the walls of the canal. The condition is generally unilateral. Shortly after birth, a slight catarrh is observed, accompanied by watering of the eye. Pressure upon the lacrymal sac causes pus or muco-pus to exude from the puncta lacrymalia. Although this is the common form, yet a definite swelling, inflamed or otherwise, may exist at the inner corner of the eye. Fistula is rarely present. Bacteriological examination reveals the presence of *staphylococcus aureus*, *pneumococcus*, *micrococcus tetragenus*, or *Fraenkel's diplococcus (sic)*. Recovery now and then ensues in the course of a few days spontaneously. Treatment comprises frequent pressure-massage over the sac, and collyria of boiled water, zinc sulphate (1:40), or silver nitrate (11:50 or 1:200). In obstinate cases one or other canaliculus should be slightly widened, and a small Bowman's probe passed down the duct.

The British Medical Association Year Book for 1905.

Published by the ASSOCIATION, 429, Strand, London.

This year book contains information likely to be serviceable to those interested in the British Medical Association, such as the laws, lists of members, council, committees, and branches and divisions of the Association. It also contains, as do most of the Association's publications, a goodly number of advertisements of proprietary articles intended for the rearing of infants, the strengthening of children, and the sustenance of old age.

NOTES AND ECHOES.

Professor Rollet.

OUR distinguished contributor, Dr. Étienne Rollet, has been appointed to the Chair of Ophthalmology in the University of Lyons, in succession to the late Professor Gayet, who died recently from the effects of a carriage accident. THE OPHTHALMOSCOPE extends its cordial congratulations to the new Professor, whose work in our specialty is well and widely known.

Recent Deaths.

AMONGST the deaths of notable ophthalmic surgeons to be recorded this month comes that of Count Piedro Gradenigo, professor of ophthalmology in the University of Padua, at the age of 74 years. As a young man he served in the rising against Austria. For ten years he was surgeon to the Venice Hospital, and he was appointed to the chair at Padua in 1873. Count Gradenigo, who came from an illustrious family that has given no fewer than four Doges to Venice, was one of the first in Italy to employ the ophthalmoscope. His contributions to the literature of ophthalmology included many valuable papers, which have recently been published in volume form by Ovio and Bonamico, two of his favourite pupils.

From Glasgow the death is announced, at the ripe age of 80 years, of Dr. J. R. Wolfe. Dr. Wolfe was a native of Breslau. He graduated M.D. of Glasgow University in 1856. He served as surgeon to Garibaldi during the campaign in Sicily, and afterwards acted as the Paris correspondent of *The Lancet*. He was later appointed ophthalmic surgeon to the Royal Infirmary, Aberdeen. On the death of the celebrated Mackenzie, Dr. Wolfe came to Glasgow, where he founded the Ophthalmic Institution. He filled the post of consulting ophthalmologist to the Glasgow Royal Infirmary, and held the professorship of ophthalmology at St. Mungo's College. About twelve years ago Dr. Wolfe, deeming a change of climate desirable, migrated to Australia, where he became surgeon-oculist to the Governor of Victoria, Lord Hopetoun, now the Marquis of Linlithgow. He returned home about four years ago, and lived in retirement from that time until his death a short time ago. His name was particularly connected with skin grafting *en masse*, the cure of detached retina by aspiration, and a modification of the operation of the extraction of cataract as practiced many years ago. Although Dr. Wolfe by no means saw eye to eye with his colleagues in all things, yet there can be no doubt that he was a man of considerable ability and of wide professional experience.

* * * *

"Radium cures

Ophthalmia."

IT were trite to say that the exact value of the new radiations in eye work has not yet been determined. Both the x -ray tube and the high frequency electrical current have been used successfully in the treatment of trachoma. As most of

our readers know, the most recent form of radiotherapy—radium, has been applied to the same malady by various workers, both British and Continental. The other week, however, the icteric press stumbled on the fact, and fathered the original upon Professor Hermann Cohn*, with the result of much woefully inaccurate but sensational copy. To see what workers preceded Cohn, we may turn to the introductory chapter by Treacher Collins appended to the translation by Parsons and Snowball (1904) of Dr. J. Boldt's essay on Trachoma. There we find the following note upon treatment carried out at the White Oak School, an ophthalmia school under the control of the Metropolitan Asylums Board:—"About six cases have been treated with radium. A tube of radium bromide has been held over the everted eyelids for five or seven minutes daily. This had to be continued for from three to ten weeks before any reaction was produced. If the exposures to the radium could be made for half an hour at a time, treatment with it would probably prove more efficacious. It would, however, be tedious to both patient and nurse to hold a tube over the everted lids for so long a time" (p. XXXII). It is somewhat amusing to imagine the surgeon holding the tube or directing the nurse to hold it in contact with the lids for half an hour. With a strip of sticking plaster he might avoid so unnecessary an expenditure of muscular energy, while the lid might be kept everted by a simple mechanical device. We may congratulate ourselves that the yellow press in this instance has chosen a German professor for its inaccurate attentions, and has spared its own countrymen from such ill-advised and embarrassing advertisement.

* * *

Photographing
the Fundus Oculi.

To photograph the fundus of the eyeball is clearly to place a new weapon in the hands, not only of ophthalmologists, but also of physicians and surgeons generally. The day may come when any practitioner wishing to ascertain the state of the fundus oculi in a patient will send him straightway to a specialist photographer, much in the same way that most medical men now send their Röntgen ray cases to unqualified persons for examination. If the ophthalmologists are wise in their generation they will take steps to keep this highly technical branch of

* For abstract of original communication see p. 93 of the present number of THE OPHTHALMOSCOPE.—EDITORS.

work in their own hands. It is surely enough for our long-suffering specialty that a large proportion of legitimate practice has been diverted to the shops of the optologist and the spectacle makers and the chemist-opticians and the rest of the pinchbeck community.

* * * *

The apparatus for photographing the interior of the eye devised by Dr. Walther Thorner of the University Eye Clinic at the Royal Charité of Berlin has been recently described and figured in a London illustrated paper. It has overcome the difficulties of illuminating the inner globe of the human eye and of including in the field of the camera considerably more than the central part of the fundus. With a soft flashlight exposure and a quick plate a good image of any part of the fundus can be obtained. Thorner's results, however, are nothing like so good as those of Professor Dimmer, judging by the photographs exhibited by the two men at the Lucerne Congress in September last. A brief note of Dimmer's work and apparatus appeared in *THE OPHTHALMOSCOPE* for December, 1904. We purpose in an early issue to publish a full account of his apparatus, together with reproductions of some of his photographs.

* * * *

**The Treatment of
Ametropia by
Massage.**

That Mr. Stephen Smith's vagaries have attracted notice elsewhere than in Great Britain is attested by the following paragraph, which appeared in our contemporary,

American Medicine, on December 31st, 1904:—

"Therapeutics of Ametropia by Massage.—One of the most amusing and illuminating of controversies in reference to eye-strain has lately been going on in English medical and lay journals. It was sprung by an antivivisectionist 'ophthalmic surgeon' of London, who announced that he could extinguish ametropia by some sort of massage of the eyeball. Mr. Stephen Smith thought he had discovered something new, and as he had no knowledge of the history or science of ophthalmology, he was perfectly sincere in his belief. But for many years a French oculist, Dr. Domec, of Dijon, has advocated this theory, and at the 1899 Ophthalmic Congress at Utrecht, Professor Darier approved Dr. Domec's contention. The results, of course, have been *nil*. Any oculist with knowledge of his science can see that whatever may be the influence of massage in changing the dimensions and

shape of the eyeball must be temporary. 'The last days' and 'the doom of spectacles' are simply funny or melancholy titles to him. Moreover, so far as priority goes, our American cranks have long been furiously advertising the same cure of ametropia by massage. The foreign crank cannot beat the American variety in devising absurdities in therapeutics. A London optician at once challenged Mr. Antivivisection Smith, agreeing to furnish ametropes for a public trial of the method under trained experts and judicial conditions. There is no hope, or danger, that the challenge will be accepted."

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ORIGINAL COMMUNICATIONS.

THE PRACTICAL APPLICATION AND THE RELATIVE VALUE OF THE TESTS USED IN EXAMINING THE EYE MUSCLES.*

BY

ALEXANDER DUANE, M.D.,

OF NEW YORK CITY, U.S.A.

Dr. Alexander Duane confines himself to a description of the routine that he himself follows. With regard to the *test-objects*, he says that, in order to ensure accurate fixation, they should be sharply defined, well separated from their surroundings, and just large enough to be distinctly visible; in order to eliminate the element of projection, they should be placed on a large blank surface; and that, in order to prevent the patient's involuntary tendency to fuse the double images

*Abstract by Dr. Duane of a paper read by him on November 15th, 1904, before the Section on Ophthalmology of the College of Physicians of Philadelphia

produced, the test-objects should be round dots or spots rather than a figure composed of vertical or horizontal lines. Hence, he uses either a small, sharp, very bright light set close to a large dead-black background, or a fairly large round target with a round bull's eye—the latter being just big enough to be seen at the given distance. With regard to the *tests*, he thinks the following comprise all that need be employed, even in the most complicated cases:—

A. Tests to determine position of eyes when at rest—*Static Tests*.

1. Test of binocular fixation—Screen test.
2. Tests of binocular vision.
 - (a) Tests showing whether binocular vision is present or not (red glass, bar-reading, stereoscope, amblyoscope, Hering's test).
 - (b) Parallax test.
 - (c) Phorometer.
 - (d) Maddox rod.
 - (e) Clinometer.

B. Tests to determine ability of eyes to move—*Dynamic Tests*.

1. Tests of monocular movement (field of monocular fixation).
 - (a) Tropometer.
 - (b) Perimeter.
2. Tests of binocular parallel movement.
 - (a) Field of binocular fixation.
 - (b) Field of binocular single vision.
3. Tests of the converging power.
 - (a) The static tests (screen, parallax, phorometer, Maddox) made for near points (showing the relation between the amount of imbalance for near and for distance).
 - (b) Convergence near-point.
 - (c) Prism-convergence (adduction).
4. Tests of the diverging power.
 - (a) Tests showing relation between imbalance for distance and near (see 3a).
 - (b) Prism-divergence (abduction).
5. Tests of supraverging power (ability to overcome prisms, base up or down).

In making the *screen test*, he places the patient with his head straight, and with his eyes in the primary position and directed straight at the test-object (target). He then passes a card from one eye to the other, and, standing a little to one side, notices whether either moves when covered (movement of deviation) or jumps back into place when uncovered (movement of redress). If any such movement is detected he places prisms before the

eye, rapidly increasing these in strength until not only is the original movement abolished, but there is a slight movement in the contrary direction. He then reckons that by deducting 2° from the prism that produces a just perceptible contrary movement, he obtains a close measure to the amount of the deviation.

If there is no screen deviation to start with, it can generally be said that there is no heterophoria greater than 1° , or at most 2° . In such a case he places a 2° prism before one eye, first, base in, and, then, base out. If now the prism, base in, produces a slight, but perceptible movement *in* behind the screen, and the prism, base out, a similar slight movement *out*, he feels assured that there is orthophoria, or, at all events, no heterophoria greater than $\frac{1}{2}^{\circ}$.

In cases of paralysis, and often also in cases of squint, it becomes important to determine the *relative amount of the primary and secondary deviation*. To do this, he first measures the screen deviation, in the way just outlined, with the prism placed before the right eye, and, then carefully keeping the patient's head and eyes in the original position, measures the deviation by a prism placed before the left eye. One measurement will indicate the primary, the other the secondary, deviation.

Having made the screen-test in the way above mentioned by alternate covering, he then proceeds to determine by it *whether the deviation that has been found is a squint or a heterophoria*.

To do this he makes the patient look, with both eyes open, at the test-object, then suddenly places the screen before one eye, say the right, then suddenly removes it. If when he covers the right eye, and again when he uncovers it, that eye *alone* moves, showing that this eye deviates when covered, but returns to fixation when uncovered, and that the other eye, which is uncovered all the time, remains in the position of fixation, the case is evidently one of heterophoria. If, under the same conditions, *neither eye moves* (and yet alternate covering has shown us that there is a well-marked deviation) the right eye is squinting. If *both eyes move*, the left eye is squinting.

Passing over the tests (red glass, stereoscope, amblyoscope, and bar-reading) which determine whether binocular vision is present at all or not, he next describes the *parallax test*. This is conducted simultaneously with the screen-test, *i.e.*, as we are watching the patient's eye to ascertain how it deviates behind the screen, we ask the patient to tell how the object looked at moves, as the screen is transferred from eye to eye. The recognition of this parallaxic movement is really a recognition of diplopia; only, instead of the double image being seen simultaneously, they are seen in succession. Thus, suppose the eyes deviate in when screened. Now, when the screen is passed

from the right eye to the left, the right eye, which is, so to speak, caught in the act of deviating inward, sees the object, not straight ahead, as the left eye (which was fixing) saw it, but off to the right, *i.e.*, the object appears to him to have made a jump from left to right. This condition, which is strictly analogous to homonymous diplopia, is properly called an *homonymous parallax*. So, too, if the right eye was turned out behind the screen, the object, when the right eye is uncovered, would appear to move to the left (*crossed parallax*); if the right eye was higher the object would appear to move down (*right parallax*); if the right eye was lower, the object would appear to move up (*left parallax*).

The parallactic movement is measured by means of the prism that just abolishes the movement. The test is a very delicate one, since, as can readily be proved by experiment, a prism of even $\frac{1}{4}^{\circ}$ will produce a well-marked parallactic movement, and deviations of this amount can readily be measured by the test.

The parallax test is particularly valuable, because affording, better than any other subjective test, a comparison between the relations of the eyes as regards binocular vision and their relations as regards binocular fixation. For, unlike the other subjective tests, it is made at the same time and under the same conditions as the test for binocular fixation (the screen test). If, then, there is a discrepancy between the findings of the screen test and the parallax—if, for example, the in-and-out jump of the eyes, which we observe, is corrected by a prism of 12° , while the parallactic movement of the object, that the patient perceives, is corrected by a prism of 4° —we can be sure that there is a real retinal incongruence of this amount, *i.e.*, that the amount by which the eyes depart from binocular fixation differs to this extent from the amount by which they depart from binocular vision. This could not be unhesitatingly predicted if we had found the same difference between the findings of the screen test and phorometer—tests that are made at different times and under somewhat different conditions.

The *phorometer* he finds unusually trustworthy, although at near points it sometimes gives an excess of exophoria, particularly if too coarse a test-object is used.

The *amblyoscope* may be used as a phorometer, particularly if, as in Dr. Black's modification, it is fitted with a vertical movement, and if, as in a model shown, it has a graduated arc, on which the amount of rotation required to put the two pictures vertically over each other can be read off directly.

The *Maddox rod*, he finds, usually gives an excess of esophoria (generally about 1 deg. more than the other tests).

The *declination* can be measured either by Stevens' clinometer or by the Maddox rod clinometer. In general, he thinks very

little of clinical value is to be gained by making this measurement, except occasionally in cases of complicated paralysis.

In testing the power of monocular movement (determining the *monocular field of fixation*) he uses the perimeter. Placing the patient's chin in the perimeter rest and adjusting the head so that the eye under examination, when in the primary position, is looking directly at the zero of the arc, he makes the patient follow with his eye a small card with two dots on it set close together. The moment his eye ceases to fix the double dot, the two dots will seem to him to run into one, and the place occupied by the card on the perimeter arc will then indicate the limit of excursion of the eye in that special direction.

He places little reliance on this test : first, because in the same patient we find a wide variation in our measurements ; second, because it not infrequently happens that a patient whose excursions as measured by the perimeter are apparently normal, and are, moreover, equal in the two eyes, shows, when we examine the two eyes together, a marked diplopia increasing with some rapidity in a specified direction of the gaze. This finding must mean that while one eye, if tested by itself, can make a maximum effort equal to that of the other, yet when it works with its fellow it lags behind the latter, and does so because one of its muscles is, at least relatively, weak.

Nevertheless, in some obscure cases, the test may be of service in differentiating a paresis of a muscle in one eye from a spasm of the associate muscle in the other.

In testing the *binocular parallel movements*, he covers the patient's right eye with a red glass, and then, standing in front of him and about three feet away, holds a candle, or, better, a small electric light, directly in line with the patient's eyes. From this point, the "eyes-front" position, the light is carried first (1) to his left, and then successively (2) up and left, (3) up and right, (4) to the right, (5) down and right, and (6) down and left, skirting thus the whole periphery of the field of fixation, and occupying in turn each one of what may be called the six *cardinal positions* of the gaze. The kind and amount of diplopia present in each of these positions is noted. In doing this, the author strongly recommends a very compact notation of his own, in which the results are put down as mathematical formulæ.

While thus delimiting the patient's *field of binocular single vision*, the observer notes also whether one lags behind at any point, and thus ascertains whether his *field of binocular fixation* is normal or no.

In determining the *converging power*, he thinks the prism-convergence (adduction, so-called) of comparatively little value as a test, on account of its variability. Much more important

are (a) the determination of the relation between the amount of imbalance for distance, when the eyes are not converging, and for near, when they are converging, and (b) the determination of the convergence near-point. The test last-named, the author thinks, should be made, even in squint; for even if the patient has no binocular fixation at all, and hence no true convergence near-point, yet a good deal can be learned from the amount by which he moves his eyes in trying to converge.

The *diverging power* he determines by ascertaining (a) the relation between the amount of imbalance at near-points, when the eyes are not diverging, and the amount for distance, when they are, and (b) the prism-divergence (abduction so-called). A prism divergence under 3° indicates subnormal, and one over 9° a pathologically excessive degree of divergence.

Tests of *supravergence*, or the ability of the eyes to diverge in a vertical plane, measured by prisms base up or down, afford very little information, and can usually be dispensed with.

The *routine* that the author advises *for ordinary cases* is the following:—

A. Measure deviation for distance by—

- (1) Screen and (2) Parallax simultaneously.
- (3) Maddox rod.
- (4) Phorometer.

B. Measure deviation for near by—

- (5) Phorometer.
- (6) Screen and (7) Parallax simultaneously.
- (8) Maddox rod.

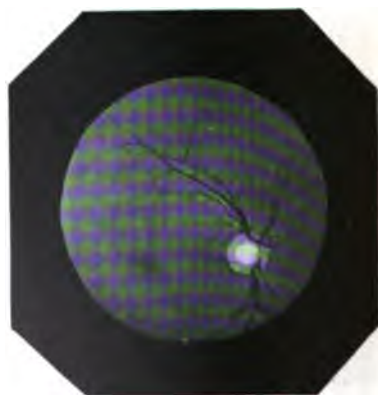
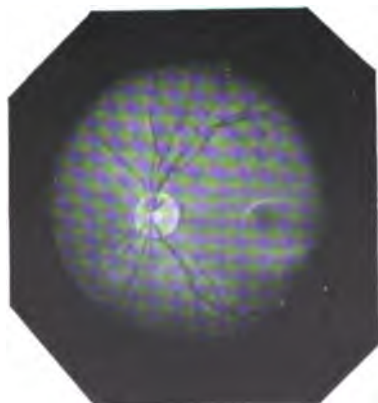
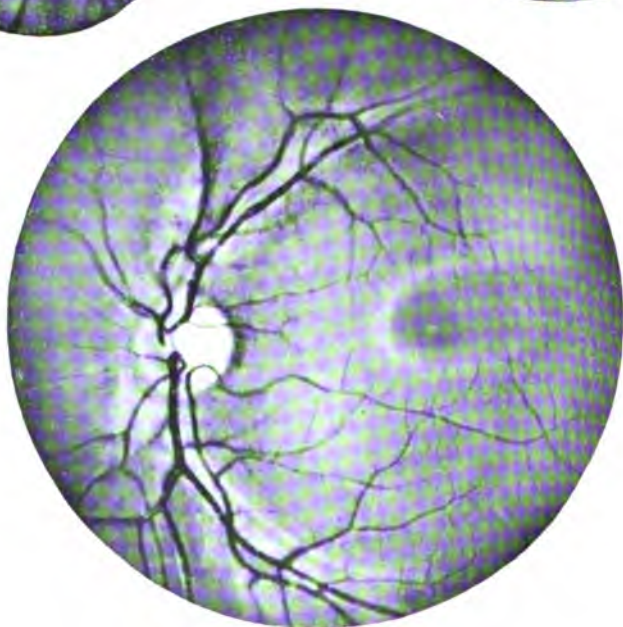
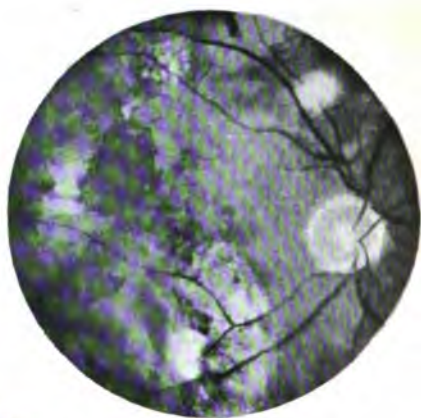
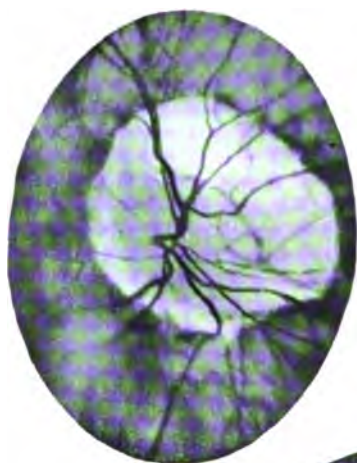
C. Determine—

- (9) Convergence near-point.
- (10) Prism-divergence.
- (11) Prism-convergence.
- (12) Field of binocular single vision, and (13) Field of binocular fixation simultaneously.

Usually in the routine examination he omits 8 and 11 (the latter particularly if 9 is normal); often also 4 and 5. With these omissions, the examination can be made in four or five minutes.

Special Routine in Squint.—Here usually all the tests of binocular vision fail us, and we are dependent on the screen-test, which is hence of especial value; also upon the determination of the convergence near-point and of the range of excursion of the eyes. We should also make some one of the tests to determine whether binocular vision is actually present or not. The author regards the screen-test as far superior to the perimeter or to any similar device that depends upon the position of the corneal reflex, for it is—

1. More accurate.



PHOTOGRAPHS OF THE FUNDUS EXEMPLIFYING PROFESSOR DIMMER'S RESULTS.

2. It can measure very small squints.
3. With it we can measure deviation for both distance and near.
4. We can measure both the primary and the secondary deviation.
5. Can measure vertical and lateral deviations simultaneously.
6. Can dispense with cumbrous apparatus, and can use in gauging effect of operations.

Special Routine in Paralytic Cases.—Tests for imbalance here of less importance. We make the screen-test in different directions of the gaze; take special care to measure primary and secondary deviation; and take special care in determining field of binocular single vision and field of binocular fixation.

.. In specially complex cases it may be necessary to determine also the declination (in paralysis of elevators or depressors) and the field of monocular fixation with the tropometer or perimeter.

ON AN IMPROVED APPARATUS FOR OBTAINING PHOTOGRAPHS OF THE FUNDUS OCULI, AS SHOWN AT THE RECENT CONGRESS AT LUCERNE BY PROFESSOR DIMMER.

DESCRIBED BY

GEORGE LINDSAY JOHNSON, M.D., F.R.C.S.,
OF LONDON, ENGLAND.

Attempts have been made to secure photographic records of the fundus ever since the memorable discovery of the ophthalmoscope by Helmholtz in 1851, but until quite recently they have been more or less unsatisfactory. The difficulties to be overcome appeared insurmountable, for not only was it found impossible to get the exposure short enough, but a way had to be found by which the reflected rays could be made to follow a different path from that of the illuminating (entering) rays which proceed from the radiant. Lastly, the difficulty of eliminating the very objectionable fundus reflexes had to be overcome. The solution of the first problem was met by employing the arc light, brought to a narrow beam by condensers, and by the use of isochromatic photographic plates sensitive to the red and orange rays, while the second and third difficulties were overcome by the brilliant invention of Dr. Walther Thorner, the most perfect fixed ophthalmoscope ever designed. Following on the lines of these improvements Professor Dimmer has succeeded in constructing an ophthalmoscope of truly gigantic proportions, which has enabled

him to take a series of photographs of both normal and pathological fundi, so superior to anything hitherto attempted, that we need offer no apology in translating his original description of the instrument and placing it, with his recent additions and corrections, before our readers.

Description of an apparatus for taking photographs of the fundus oculi by Professor F. Dimmer, of Graz.

"In my paper read before the last Congress of Ophthalmology I mentioned that as I had entirely got rid of the ocular reflexes and succeeded in getting a sufficiently large field of view, nothing remained for me to do beyond obtaining photographs with still sharper definition. My endeavours were crowned with complete success, and to-day I am able to lay before you a collection of photographs which show a marked advance as regards sharpness of detail, so much so, that almost all the minutiae seen with the ophthalmoscope can be seen in

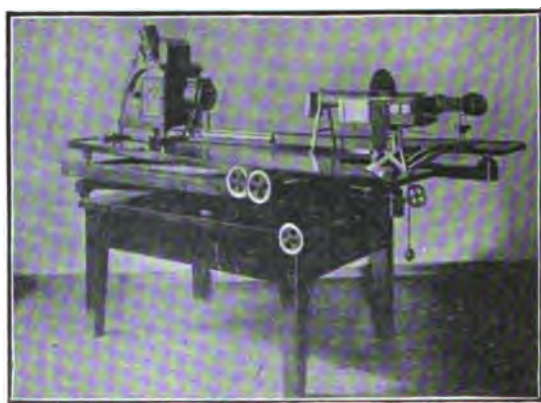


Fig. 1.

the prints (*see* Plate). This success was not due to any improvement in the apparatus, but to the fact that the exposures were practically instantaneous. The duration of exposure, which formerly took one-fifth of a second, or longer, is now reduced to one-sixteenth—one-eighteenth of a second, or even one-twenty-fifth. In order to reduce the time as much as this I found it a *sine qua non* that the whole of the light which emerged from the half of the pupil should be concentrated on to the photographic plate.

The accompanying diagram and photograph show my apparatus as I now use it. The arrangement by which I have got rid of the confusing reflexes and flare is by placing a plane mirror (S), Fig. 2, exactly in front of the patient's pupil at an angle of 45° with the optical axis. This mirror receives the whole

of the condensed light from the source (L), and reflects it into the eye through half the pupil, so that the light which passes out of the remaining half of the pupil is alone employed to form the image. In order to obviate the formation of reflexes near the edge of the mirror due to half of the pupil being hidden, half of the camera objective is blocked out by an opaque diaphragm (O₂). This lens (O₁) is a Zeiss Planar objective of 160 mm. focus. In the diagram the light from the lower half of the pupil will pass through the upper half of the Planar lens, while the light proceeding to the lower half of the Planar is screened off by the diaphragm. It will be noticed in this my latest model that the very large aperture of the Planar ($f/4.5$), which I may add is 45 mm. in diameter, takes in the whole of the rays emerging from the half pupil so that none is wasted. The image of the half pupil formed by the first objective (O), is of course half-moon shaped, and so large that

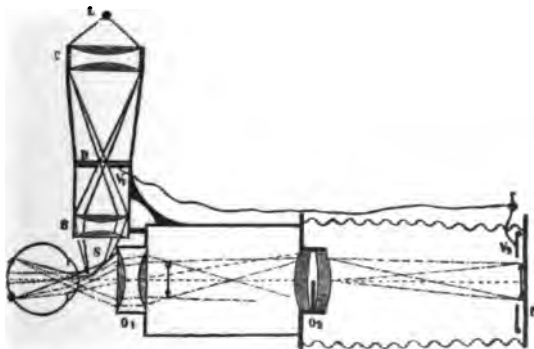


Fig. 2.

in my former instrument the decentred lens (an anastigmat of only 19 mm. diameter) invariably cut off a portion of the light.

The frosted screen used in the illuminating apparatus is now abandoned, so that the image of the electric arc (L) is formed in the plane of the open diaphragm (D). From this diaphragm an inverted image of the illuminating system (B) is formed in the half of the pupil reflected in the mirror (S), by which means the area of the background of the eye which appears in the photograph, and no other part, will be illuminated.*

The shutter (V₁) lies immediately behind the diaphragm (D), while the second shutter (V₂) which I have changed to a roller blind, lies just in front of the plate (P). By means of a mirror (not shown in the figure), the image of the fundus can be observed up to the very moment of exposure. A squeeze of

*In Fig. 2 the illuminating (entering) rays which fall on the fundus are represented by beaded lines, the emerging rays by dots and dashes, while the aerial rays from the lower half of the pupil are represented by dashes only.

the rubber ball (T) causes the mirror to flap up, and at the same moment both shutters, controlled by a single wire are opened and closed again by an electric current. The eye is thus exposed a trifle longer than the plate, *i.e.* about one-eighth second.

The front part of the instrument between the two objectives must never be touched. The focussing due to anomalies of refraction in the examined eye, is obtained by racking the focussing screen (P) in or out, as the case may be.

The position of the eye to be examined is obtained by getting the patient to fix the image of a flame (seen in a mirror placed before him) with his other eye, or else by means of a cross wire placed in the illuminating zone, which is observed by the patient with the eye about to be photographed. By this latter method a patient possessing only one eye can have it photographed.

In emmetropia the image taken by the direct method has a diameter of about 30 mm. The large illustration (shown elsewhere.—Trans.) of 80–100 mm., is due to subsequent enlargement. The original negatives show an enlargement of three diameters so that the largest picture shows a magnification of 10 to 11 diameters.

I have shown that by lateral and vertical movements of the patient's eye a much more extended area can be photographed. This extension after repeated trials is found to be about 10–12 times the diameter of the disc in the meridional line.

The construction of the instrument has been undertaken by the firm of Zeiss, which has met my wishes in the fullest way, so that all the requirements necessary have been carried out, and no further adjustment or alteration in the illuminating apparatus has been found to be needed. The two large tubes† one of which contains the condensing lenses for illumination, the other the two sets of objectives for the camera, are firmly fixed to each other, but nevertheless are capable of coarse and fine adjustment for the eye. All that is necessary to take a picture is to adjust the arc light (which is identical with that employed by Zeiss for his projection camera), so as to illuminate the fundus to enable the image to form a focus on the plate in the camera slide. Last year I used a Nernst lamp, but this I have been able to replace by the more powerful arc light, so that a photograph can now be taken in an instant even by the merest tyro."

†These tubes are not shown in the photograph (Fig. 1), but are indicated in the diagram. The entire apparatus is very massive and heavy, being about 5 to 6 feet in length. The wheels seen in the photograph are attached to long screws, which enable the instrument to be raised or lowered, turned laterally, or moved nearer to or further from the patient's eye, whereby much time is saved, as the adjustments can be instantly effected.—TRANSLATOR.

NEW CONQUESTS OF OCULAR THERAPEUTICS.

By DR. A. DARIER,
OF PARIS, FRANCE.

Stovaine: a new local anæsthetic.

(Continued from page 7.)

THE most important conquest in the realm of therapeutics during recent years is assuredly the discovery of cocaine and of the other local anæsthetics. The latter are growing more and more numerous, but they have not yet succeeded in supplanting cocaine.

Lactate of eucaine β has recently excited a good deal of interest. And now the year 1904 has given birth to a new anæsthetic, produced by pure synthesis, which is destined to play an important rôle in the future, although it apparently will not displace cocaine.

Stovaine will render real service in surgical anæsthesia by infiltration, as has already been proved by Professor Reclus. But for ocular anæsthesia by instillation cocaine is superior in several respects. Stovaine is a hydrochloride of the dimethylamine β benzoyl-pentanol, and forms part of a series of bodies found by Fourneau in the group of amino-alcohols of tertiary alcoholic functions (1).

This discovery is the result of a systematic course of research pursued by Fourneau in order to determine the respective importance of the different chemical groups in relation to their anæsthetic properties.

There are two points in this study which are particularly interesting; one is the importance, anæsthetically, of the benzole group, the other is the marked toxicity of the *noyau piperidinique*. Cocaine, tropacocaine, and eucaines have as basis this piperidinic nucleus, which is the cause of their toxicity. On the other hand, holocaine, nirvanine, acoine, anæsthesine, etc., are generally derived from aniline; they are much less toxic, but also less anæsthetic.

The object was, therefore, to find a means of grafting the anæsthetic benzole group on a nucleus less toxic than piperidine.

Fourneau and Billon have given the preference to the radical ethyl, and in this way have obtained stovaine. A study of this new anæsthetic, accompanied by a large number of references, has just been made in Ruthon's thesis, and we borrow his chief arguments.

Stovaine crystallises in the form of small, white, brilliant spangles. It is very soluble in water. Its reaction is acid with tournesol, and neuter with helianthine. Its melting point is 175° ; it slowly decomposes in an aqueous solution at 120° ; at 115° it

(1) *Comptes Rendus Acad. des Sciences*, février, 1904.

readily bears sterilisation for twenty minutes in the autoclave, without deterioration. Neither is it subject to change when in a state of prolonged ebullition in the open air; it crystallises and becomes deposited intact by evaporation until perfect dryness is attained. Its solutions can therefore be sterilised by heat, without the product suffering thereby. Thanks to this remarkable stability, the sterilisation may be absolute, which is an important point when the product is used for surgical purposes.

Degree of toxicity.—A new anæsthetic cannot take the place of another and older one unless among its advantages there exists, above everything, a lesser degree of toxicity. It is precisely because stovaine possesses a low toxicity—first of all established by experiments made upon animals—that this product can be introduced into the sphere of surgical practice.

An average of more than sixty experiments made on the guinea-pig (which is much more sensitive than the rabbit to the action of stovaine) has shown Launoy & Billon that it requires an appreciably larger dose of stovaine than of cocaine to cause the death of the animal.

In a study, supported by numerous references, which has been undertaken by Pouchet and his assistant Chevalier, these *savants* come to the conclusion also that the toxicity of the hydrochloride of amyline is much weaker than that of cocaine. They have obtained the same co-efficient of toxicity as Launoy and Billon, and have demonstrated that the latter does not vary with the different ways of injecting the product; and that it is evidently the same, whether injected intravenously or intraperitoneally or subcutaneously. "Stovaine seems to act as a poison to the whole of the nervous system, the respiratory troubles, the vomitings which are always observed after the injections, clearly indicate an action of the substance on the medulla." Moreover, sensibility disappears from the commencement, the corneal, the conjunctival, abdominal, etc. reflexes, however, remain normal, and the motor nerves give proof of their participation in the intoxication by a diminution, and then by a loss, of their electrical excitability. One can even simulate the physiological section of the nerve by submitting a segment to the action of a solution of stovaine. In Pouchet's opinion, this section would not be so clear as with cocaine.

Antiseptic action.—The bactericidal properties of stovaine are interesting, and have been brought prominently forward by Pouchet. Its power in this respect is considerable, as in the proportion of 1 in 1000 it rids water of its germs in twenty-four hours.

Local anæsthesia.—Stovaine was first used clinically in ophthalmic surgery. It was brought forward by Prof. de Lapersonne, who predicted from the commencement a great

future for stovaïne. It appears that further communications confirm this prophecy. Stovaïne is used in ophthalmology by means of instillations or of subconjunctival injections. When instilled in the form of a physiological solution of 4/100, it first of all produces a strange sensation, as of a foreign body, accompanied by disagreeable pricking, smarting, and photophobia, causing blinking, followed by lacrymation and closing of the eyelids. At the end of two minutes, the anæsthesia is sufficient to allow the surgical intervention to be commenced; sensibility having disappeared, the eyelids open, the palpebral reflex is dormant, and the conjunctiva no longer reacts, and is insensitive to pain. The vessels become dilated, so that here, at least, it is scarcely possible to deny a vaso-dilator action. Sometimes one may observe a slight dulling of the cornea, due to an epithelial desquamation, but in a slight degree only, and very much less than that produced by certain species of cocaine. According to de Lapersonne, the pupil undergoes a slight degree of myosis, but, according to Stephenson, Fromaget, and Dion, on the contrary, a marked dilatation is produced. But these two phenomena are not contradictory when we note that myosis is indicated by de Lapersonne at the onset of the anæsthesia, and mydriasis by Fromaget and Dion after ten to fifteen minutes. The observations do not correspond with the same phase of the anæsthesia, and the apparent inconsistency is explained by this anachronism.

The duration of the anæsthesia thus obtained is short. Three drops of a 0.75 % solution of stovaïne give an anæsthesia lasting six minutes. In order to obtain a deep and durable anæsthesia, it is necessary to repeat the instillations at intervals of one minute, without waiting for sensibility to return, so as to avoid the disagreeable phenomena which take place at the onset. In this way an anæsthesia lasting from twenty to twenty-five minutes can be obtained, which is sufficient for the usual operations. Section of the cornea or of the conjunctiva, and the various manœuvres of extraction are not perceived; and even the operation for cataract is possible, although the traction of the iris, during iridectomy, is painful.

A subconjunctival injection of 1/100 of stovaïne, sufficient to produce local chemosis of the size of a lentil, determines in the course of a minute an intense vaso-dilatation of the vessels surrounding the swelling and complete insensibility. All interventions are practicable: the stretching of the muscle in the operation for strabismus is alone painful, in consequence of the traction exercised over the whole extent of the organ, for it is not easier to make deep injections with stovaïne than with cocaine. By these means de Lapersonne has succeeded in operating on several cases of strabismus, and of tarsal cyst; he has also

been able to perform canthoplasty without mishap. It is only just to add that the vascularisation of the eye has never constituted a hindrance to the operator, and, contrary to cocaine, stovaine has no unfavourable action upon the eyeball; it produces no increase in tension.

Although when applied by instillations stovaine produces an anæsthesia, sufficient although inferior to cocaine both in intensity and duration, yet, according to de Lapersonne, in injections it has shown itself superior to cocaine in the rapidity of its diffusion, and in the duration of the anæsthesia obtained.

The comparison of the relative anæsthetic powers of stovaine and cocaine has been methodically made in general surgery by an ingenious process employed by Reclus and Chaput. On two occasions, for the extraction of a bullet in the arm and the incision of a sub-deltoid abscess, Chaput anæsthetised the upper half of the line of incision with a solution of cocaine, and the lower half with a solution of stovaine, both of 1 in 200; and found that "in both cases the analgesia was identical along the whole length of the incision."

In order to judge of the comparative value of the two anæsthetics, Reclus also had recourse to this procedure in November, 1903, and he says: "Apart from a few slight shades of difference of so passing a character that they contradicted one another from one operation to another, we believe we may conclude that cocaine and stovaine have the same analgesic property, in the same degree."

However, those surgeons who have now subjected it to a longer study, declare that the anæsthesia produced by stovaine is less than that produced by cocaine; but, at most, it is only a question of degree, for the anæsthesia, although less complete, or rather less massive than that obtained by cocaine, is never insufficient or of too short a duration to prevent the surgical intervention being completed. When the latter is of long duration, the insertion of the last stitches is scarcely perceived (Reclus). Reclus says that "the difference is really infinitesimal, if it exists, and, as a matter of fact, stovaine is quite equal in value to cocaine." But, when we admit that, taken in equal doses in solutions of the same strength, stovaine does not produce quite such a good anæsthesia as cocaine; its superiority can be readily seen, for its degree of toxicity, considerably less than that of cocaine, authorises a less parsimonious use of the former, and enables us to anæsthetize wider regions. It is said that the accidents imputed to cocaine are due, in most cases, to an awkward use of the agent. That may be so, but it is none the less true that cocaine troubles, as pallor of the countenance, nausea, and precordial anxiety, however benign or mild they may be, are not to be feared with stovaine. Chaput, who since April last

has administered no local anæsthetic other than stovaïne, has never observed these accidents. Reclus, who has been making use of this anæsthetic for a still longer period—that is, since October, 1903—would be in a position to make a similar declaration had it not been for the fact that in the case of one particularly emotional individual pallor of the face was observed.

But in connection with the use of anæsthetics there is fear, distinctly vaso-constrictive, which is not done away with by the use of stovaïne.

Considerable doses have, however, been injected. Reclus deliberately ventures to use a larger quantity of stovaïne than of cocaine, and he has performed several operations in which he has employed from 10 to 22 cgr. of this substance. Chaput has himself injected 22.5 cgr. without the patient exhibiting any signs of distress. The reason for this lies in the fact that stovaïne, the general vaso-dilator action of which may be disputed, certainly produces no bulbar anæmia, inasmuch as it does not predispose to syncope.

This advantage becomes still more appreciable when it is a question of an operation in everyday practice, considered by the public as insignificant, who are reluctant to subject themselves to treatment which to them appears harsh and disproportionate to the advantages to be gained by the intervention. Consequently, stovaïne will render invaluable service to the dentist. The "dangerous zone" does not exist; the accidents which have occurred in dental surgery are not caused by the proximity of the brain; they have diminished in frequency as the concentration of the dose of cocaine has been lessened; and yet they have persisted in happening, because very often the patients have not been operated on when lying down. Now, with stovaïne Chaput has operated on patients in a sitting posture; Sauvez, Cirès, and Nogué were able to make a considerable number of dental extractions without ever observing these disagreeable symptoms, these tendencies towards fainting to which they were accustomed with cocaine, without being in the least watchful. We think it almost unnecessary to add that the anæsthesia was always good, and was followed by no distress. "We have therefore in stovaïne," writes Dr. Nogué, "an anæsthetic which is capable of rendering us the greatest services in dentistry."

The equal analgesia, together with the inferior toxicity of stovaïne, enables us to foresee that its use is indicated in every case where cocaine can be employed. Moreover, it is a fact worthy of note that stovaïne maintains its anæsthetic action in inflamed tissues, where cocaine acts little or not at all. On several occasions we have been present at operations for abscesses. In

these inflamed tissues the prick is painful, but the pain ceases as soon as the injection has been given, and we have been surprised at the indifference which is manifested when the inflamed teguments were incised.

One inconvenience about the use of stovaïne might lie in its too energetic vaso-dilator power—that is, in the abundance of the hæmorrhage which follows the incision. But this action cannot be a danger or a hindrance, because it is so slight that even its existence has been denied by certain authors. "We have scarcely anything to suffer from it," says Reclus, "and it is only by way of a memorandum that we publish the fact." The beneficial effects of stovaïne in local anæsthesia induced Chaput to try it in rachidian injections, and the results obtained were very satisfactory. A dose of 2 centigrammes of cocaine determined an anæsthesia extending to the xiphoid cartilage; a larger dose of stovaïne is required to obtain the same results. The latter is, however, rarely necessary, since, for psychic reasons, spinal anæsthesia is rarely indicated in abdominal interventions above the iliac region; smaller doses are sufficient, answering with fair precision to a pre-determined analgesia. Three centigrammes of stovaïne enable one to obtain an anæsthesia reaching to the root of the thigh—that is to say, allowing of any operation upon the lower limbs; 4 centigrammes suffice for a radical cure of hernia; 5 centigrammes produce anæsthesia of the umbilical region; 6 centigrammes reach to the xiphoid cartilage.

Toxic Accidents.—The slight gravity of the accidents which have been observed with lumbar anæsthesia produced by stovaïne calls for some remark. During the anæsthesia, the pulse is at first accelerated (vaso-dilatation, emotion, &c.), then gradually decreases in frequency, until 60 pulsations per minute are reached; the patient regains confidence, for there is no pain; the face remains bright in colour; there is no tendency to syncope and nausea is the exception. These phenomena agree with those of experimental intoxication, and in no way resemble the painful, and sometimes disquieting, picture, which was often presented by one in whom lumbar anæsthesia has been induced by cocaine. The increase of the cardiac tonicity, and the consecutive high pressure, might constitute the only contra-indication to lumbar stovaïne, when it is a question of aged persons, whose friable arteries expose them to the danger of cerebral hæmorrhage. In these cases one should observe strict moderation; besides, no accident of the kind has hitherto been recorded. Headache is fairly frequent (40% of the cases) and rachialgia likewise; but the pain is not severe, and is readily obviated by antipyrin, and, so to speak, it never calls for an evacuatory puncture. A considerable rise in temperature often coincides with a more acute headache, a more intense rachialgia, and may

be related to an irritation of the meninges. The latter was the rule after the injection of cocaine.

Conclusions.

1. Stovaïne is an agent much less violent than cocaine. It shows a lesser toxicity by one-half in animals, while its use in human surgery has demonstrated that, in equal anæsthetic doses, its toxicity is much less.

2. Although a general poison as regards the nervous system, stovaïne is not a poison as regards to the heart. It braces up and increases the intensity of the contractions of the myocardium. It does not provoke anæmia of the eye-ball, but, if anything, a feeble vaso-dilatation, best seen in the face. It seems to make the patient proof against syncope, and he can accordingly be operated upon in a sitting posture, whereas prudent practitioners always require that patients be in a recumbent position when cocaine is administered.

3. As a local anæsthetic it is, dose for dose, perhaps less powerful than cocaine for practical purposes; the classical solution of 1/200 of cocaine can be replaced for infiltration anæsthesia by a similar solution of stovaïne, 1 in 200. It not only permits of the same operations as cocaine, but of more extensive interventions, requiring much heavier doses of the anæsthetic.

4. Administered as a rachidan injection, stovaïne does not determine the troubles frequently observed with cocaine, such as pallor of the face, giddiness, lypothæmia, and syncope; in the cases which have been studied it has produced no meningitic irritation; so that rachi-anæsthesia, which was rather neglected by surgeons, seems once more to call for their attention, this time with stovaïne as the anæsthetic agent.

5. Stovaïne is an antiseptic and an antipyretic.

Such are the conclusions of Ruthon's thesis. We will add that in eye work cocaine will preserve, for the present at least, the pre-eminence in conjunctival instillations; because it is less painful than stovaïne, and because applied in this way there is nothing whatever to be feared in relation to its toxicity.

If one desires, however, to obtain a more rapid corneal anæsthesia, the following collyrium can be used:—

Stovaïne	0.10.
Cocaine Hydrochloride ...	0.10.
Physiological solution ...	5 gr.

Quite different will be our conclusions if we consider anæsthesia by subconjunctival or subcutaneous injection made either for strabismus operations, or for operating upon the eyelids. In this case stovaïne is clearly superior, owing to its lesser degree of toxicity, and preference should be given to it. However, when the operation is a long one, and it is desired to maintain

a correspondingly prolonged anæsthesia, one can associate with stovaïne acoine which, as we know, can produce an analgesia lasting several hours. A mixture of acoine, of stovaïne, and of cocaine, in equal parts, has given me very good results on many occasions.

(To be concluded.)

ETHYL CHLORIDE IN EYE SURGERY; WITH AN ACCOUNT OF A FATALITY.*

BY

BEATSON HIRD, M.B., Ch.B., etc.,

House-Surgeon, Birmingham and Midland Counties Eye Hospital.

These notes must be somewhat brief for two reasons :—first, because general anæsthesia is not necessary in most eye operations; and, secondly, because the use of ethyl chloride as a general anæsthetic is not very old.

Most eye operations, as you are well aware, are performed under local anæsthesia produced by the instillation of cocaine (usually 4 per cent. solution) or in the case of operations on the lids, by subcutaneous injections of a 2 per cent. solution. It is owing to this fact that general anæsthesia is not so often required in this branch of surgery as in some others.

Among the general anæsthetics used prior to the advent of ethyl chloride—gas, for the shorter operations, and chloroform, for the longer, were generally employed. Chloroform is certainly an excellent anæsthetic, owing to the simplicity of apparatus, and to the fact that it can be given with so little obstruction to the eye surgeon. It has been especially employed for dealing with traumatic cases, for excision of the eye, and for iridectomies and extractions, particularly in nervous or young patients, in which cases the anxiety and nervousness of the patient might lead to movement of the eye at a critical moment, in spite of local anæsthesia.

Many of the smaller operations in eye surgery used to be done under gas when only a short general anæsthetic was required.

At the Birmingham and Midland Counties Eye Hospital ethyl chloride has been used as a general anæsthetic chiefly during the last two years, and has largely taken the place of gas and, to some extent, that of chloroform. It is chiefly employed in our out-patient department. I can best show its use by quoting figures showing its administration during the past two years.

During the year 1903 ethyl chloride was administered on sixty occasions as a general anæsthetic, mostly to children.

*Read February 3rd, 1905, before the Society of Anæsthetists.

The following were the operations for which it was given :—

For cauterising corneal ulcers	...	...	...	21 times.
For abscesses of the eyelids and tear passages...	...	...	...	19 "
For removal of tarsal tumours	...	...	...	7 "
For internal tenotomy in strabismus	...	...	...	6 "
For probing the lacrymal duct	...	...	...	3 "
For removal of sebaceous cysts	...	...	...	twice.
For division of the canaliculus	...	...	...	twice.

Excisions were performed under chloroform.

Eviscerations " " chloroform or gas.

Apart from chloroform, ether was given on 4 occasions.

During the year 1904 the administrations of ethyl chloride were ninety-one, or 50% increase on the previous year, and this was largely at the expense of gas. The operations for which it was given were as follows :—

For cauterising corneal ulcers	...	...	...	26 times
For abscesses of the eyelids and tear passages	...	...	...	9 "
For removal of tarsal tumours	...	...	...	10 "
For internal tenotomy in strabismus	...	...	...	23 "
For probing the lacrymal duct	...	...	...	7 "
For washing out the lacrymal sac	...	...	...	twice
For examination of the eye	...	...	...	twice
For removal of a foreign body	...	...	...	once
For excision of the eye	...	...	...	on 5 occasions
For evisceration of the eye	...	...	...	on 3 occasions
For needling	...	...	...	twice
For iridectomy	...	...	...	once.

The latter three operations were performed on children under 8 years, but local anæsthesia is, as a rule, employed in older patients.

From these figures you can see that ethyl chloride is of considerable use as a general anæsthetic in the smaller and shorter operations on the eye and its appendages. The majority of administrations were for cauterising corneal ulcers and opening abscesses. It has proved itself a good anæsthetic for squint operations, the majority of which are performed in our out-patient department, and its use is steadily increasing for these.

It is interesting to note that last year it practically replaced chloroform on five occasions, *viz.*, in operations for excision. For this operation a general anæsthetic is necessary, and it is the rule to give chloroform, as ethyl chloride is hardly sufficient unless the operation is rapidly performed. Ethyl chloride was also given on three occasions for the operation of evisceration, an operation in which a general anæsthetic is necessary, and, one for which ethyl chloride is well suited.

I anticipate that ethyl chloride will now entirely replace gas and that its use will steadily increase. As a general anæsthetic

I have administered it on over one hundred occasions for short operations in eye and general surgery, and with but one exception, I have never experienced any difficulties. Patients have always taken it easily and well, and with the exception of occasional vomiting (in unprepared cases chiefly), I have seen no ill after-effects. The exception to which I refer, I regret to say, proved to be fatal. It was not an ophthalmic case but one which occurred last year when I was House-Surgeon at the General Hospital in Birmingham.

The patient, *æt.* 67 years, a male, and a tailor by occupation, was admitted to the General Hospital, Birmingham, on June 16th, 1904.

He appeared to be a man of fairly good health and was moderately stout. He complained of a swelling of his jaw and neck, with some difficulty in breathing. His breath was foul, and he had a sano-purulent discharge into his mouth, with ulceration of the left side of the inner surface of his cheek. There was considerable swelling of his lower jaw, especially on the right side, and also swelling of his neck. The swelling, as a whole, was brawny, but distinct fluctuation could be obtained on the right side just over and below the lower jaw. The swelling had been forming for several months. A diagnosis of malignant growth of the lower jaw, with breaking-down glands, was made, and it was decided to incise the fluctuating mass to relieve his dyspnœa and general distress. The nature of the operation was explained to him, and he willingly gave his consent to having it performed. He was prepared in the usual way for operation. His temperature was 98° F. Pulse—normal rate, of fairly good tension, and regular. His heart was not enlarged, and the sounds were distinct, though feeble. His chest was well-formed, barrel-shaped, and there was very little expansion on respiration. The breath sounds were harsh, expiration was prolonged, and some rhonchi were present. His urine was of low specific gravity, and contained a little albumin.

The operation was performed by the Resident Surgical Officer, Mr. Fairlie-Clarke, F.R.C.S. It was decided merely to make an incision over the fluid swelling and to drain it. The anæsthetic was administered by myself, and we both considered ethyl chloride the best to give. I had gags and tongue-forceps at hand, as it was recognised that there might be some trouble with respiration. I administered the anæsthetic with an Ormsby inhaler and bag. Six cubic centimetres of ethyl chloride were sprayed on the sponge. The patient took the anæsthetic without struggling, and after being administered for about 1½ minutes the patient was considered ready for the operator. The breathing was then shallow, and pupils were widely dilated, but the conjunctival reflex was not quite abolished. There was no jaw spasm.

The operator made an incision, about 2 inches long, over the swelling of the jaw on the right side, and fluid, almost pure, blood escaped. At this moment the patient stopped breathing. I had been giving the anæsthetic for about 2 minutes. I immediately removed the apparatus, opened the jaws by means of a wooden wedge, as there was then some spasm, and drew the tongue outwards and upwards. The patient still did not breathe, so we began artificial respiration at once. After about four minutes the patient began to breathe again, and was soon of a good colour and breathing deeply. Artificial respiration was now stopped, and the operator put in two stitches to close the wound. The anæsthetic was not continued. The dressings were being applied when the patient began to struggle and tried to get off the table. The operator, two nurses, and myself were required to hold him. He had not regained consciousness. After struggling for about three minutes, he became very cyanosed and stopped breathing. Artificial respiration was again performed for at least fifteen minutes, and in the meanwhile I gave him a hypodermic injection of 15 minims of *liquor strychninæ hydrochlorici*. His pulse could not be felt, nor could his heart sounds be heard. Tracheotomy was performed, artificial respiration being kept up as well as possible. The tongue was held out all the time, and traction made on it after Laborde's method. After tracheotomy had been performed, artificial respiration was kept up continuously for fifteen minutes, but there was never any sign of respiration or pulse.

An inquest was held, and a *post mortem* examination was made by Dr. Wynn, resident pathologist at the General Hospital.

There was an epitheliomatous ulcer, the size of a shilling, on the inner side of the left cheek. The swelling in the neck consisted of enlarged malignant glands, which had bulged in the left wall of the pharynx, so that it was pushed almost to the middle line, its transverse diameter being about half the normal size. The growth also pressed in the upper cavity of the larynx, so that it also was diminished in width. The external laryngeal muscles on the left side were invaded by the growth, and the left vocal cord was markedly swollen and œdematous.

The heart weighed 13 ozs. The heart muscle showed marked fatty infiltration, especially of the wall of the right ventricle, which at the apex was not more than one-tenth of an inch thick. The right ventricle was much dilated, and the tricuspid valve admitted five fingers. It contained black blood clot. The left ventricle was moderately dilated. The aortic and mitral valves were thickened, but competent. The lungs were both intensely congested with venous blood. The liver weighed 54 ozs., and showed fatty degeneration and infiltration with recent venous congestion. The kidneys—right $4\frac{1}{2}$ ozs., left $4\frac{1}{2}$ ozs.—both

showed moderate interstitial fibrosis with fatty degeneration and infiltration, as well as recent venous congestion. The spleen weighed $4\frac{1}{2}$ ozs.—venous congestion. The meninges and brain showed recent venous congestion.

Death was considered as due to the anæsthetic. From the whole condition of the patient it is difficult to imagine a more unsuitable case for operation. I had always regarded ethyl chloride as a safe anæsthetic, but I believe these neck and jaw cases are extremely unfavourable for a general anæsthetic of any description.

HOSPITAL NOTES.

NORTH-WEST LONDON HOSPITAL.

UNDER THE CARE OF

SIR WILLIAM J. COLLINS, M.S., B.Sc.Lond., F.R.C.S.Eng.,
SURGEON TO THE HOSPITAL.

(Notes by Dr. WRIGHT, Resident Medical Officer.)

Traumatic palsy of levator palpebrae, superior rectus, and sphincter pupillæ, with marked monocular amblyopia, persisting for several days and terminating in recovery.

James P., aged 14 years, was admitted to the North-West London Hospital on September 14th, 1904, under the care of Sir William Collins, suffering from ptosis on the right side and marked dilatation of the right pupil. He stated that five days previously, being then in perfect health, he had been thrust in the right eye with a pitchfork. It did not appear certain that it was the point of the fork that came in contact with his eye, and on careful examination in the casualty the same evening, no evidence of any penetrating wound either of the lids or the globe could be detected, though there was a minute wound of the conjunctiva near the inner canthus and a little extravasation of blood around this spot.

On examination by Sir William Collins it was found that there was not only complete ptosis, but there was also no upward movement of the right globe when the patient was told to look at the ceiling. The movements in, down, and out were practically normal; further, the pupil was widely dilated and did not act to light or to accommodation, and vision was reduced to bare perception of light; he could not count fingers held at 12 inches. The tension of the right globe was normal. There was no disturbance of sensation of or around the eye. With the ophthalmoscope the media were found to be clear, and there was no evidence of hæmorrhage into the vitreous or the retina, and except for a marked

degree of physiological cupping, there was nothing to be noted in the fundus oculi.

The other eye was quite normal, and this one was said to have been so prior to the blow. There was no history or sign of inherited syphilis.

No treatment beyond rest in bed and an aperient dose of Hyd. c. Cret. was ordered.

September 19th.—Slightly less dilatation of right pupil and slight action to light. Vision of R. E. $\frac{6}{60}$.

September 27th.—Ptosis persists. Pupil reacts well to light and to accommodation. Vision R. E. $\frac{6}{60}$.

September 30th.—Vision $\frac{6}{60}$ and J. 14, but no recovery yet of superior rectus or levator palpebræ. No fundus changes.

October 5th.—Pupils nearly equal. Ptosis less marked and some improvement in upward movement of globe. Discharged to out-patients.

November 3rd.—Patient came up for observation. There is a slight degree of ptosis. All movements of the globe are normal. Pupils equal and react normally. Accommodation returned.

Vision R. E. = $6/12$ and J. 4.

„ L. E. = $6/9$ and J. 1.

Note by Sir W. J. Collins.—Where was the lesion in this case, and what was its nature? Presumably from the grouping of the palsies and the nature of the trauma the lesion was in the orbit, and not more centrally situated. Was it the result of hæmorrhage? No sufficient evidence of hæmorrhage, either extra-ocular or intra-ocular, betrayed itself during the subsequent three weeks. Hæmorrhage, then, unless minute, multiple, and curiously distributed, would seem to be unequal to explain the symptoms. Were the amblyopia and the paralysis of levator, rectus (superior), and iris, then, the result of “concussion”? It seems that some such explanation must be vouchsafed. No fundus changes of an inflammatory or atropic nature supervened, and all the lost functions were restored. We are, therefore, left to assume that the trauma occasioned some “molecular” changes in the optic nerve, the ciliary nerves, or muscle, and the levator and rectus superior muscles or their nerve supplies, which abolished temporarily their respective functions, though happily only for some two or three weeks.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—BACTERIOLOGY.

- (1) **Knapp, Arnold.**—Severe pseudo-membranous conjunctivitis in an infant, presumably due to the influenza bacillus. *Archives of Ophthalmology*, July, 1904.
- (2) **Knapp, Arnold.**—A bacteriological study of trachoma, with remarks on the occurrence of the influenza group of bacteria in conjunctivitis. *Archives of Ophthalmology*, September, 1904.
- (3) **Chaillous, J.**—Traumatic infection of the eyeball by an anaërobic microbe (*Bacillus perfringens*). (Infection traumatique du globe oculaire par un microbe anaérobie (*Bacillus perfringens*.) *Recueil d'ophtalmologie*, novembre, 1904, p. 678.
- (4) **Morax, V.**—Annular abscess of the cornea and its meaning. (L'abcès annulaire de la cornée et sa signification.) *Annales d'oculistique*, décembre, 1904.
- (5) **Buerger, Leo.**—A new method for staining the capsules of bacteria : preliminary communication. *Medical News*, 10th December, 1904.
- (6) **Urbahn, Hermann.**—The gonococcus theory. *Arch. für Augenheilk.*, Bd. XLIV, and *Archives of Ophthalmology*, November, 1904.
- (7) **Tertsch, R.**—A contribution to the study of the diphtheroid bacilli of the conjunctival sac. (Ein Beitrag zu den Diphtheriebazillus ähnlichen Stäbchen des Conjunktivalsackes.) *Zeitschr. f. Augen.*, November, 1904.

(1) An Italian child, aged 6 weeks, was brought to **A. Knapp** on account of an inflammation of both eyes, associated with a non-adherent membrane on the tarsal conjunctiva and haziness of the corneæ. Under treatment the conjunctivitis cleared up, although with perforation of one cornea. A smear preparation taken on the third day gave short bacilli. Agar tubes, inoculated with secretion, showed (1) *B. xerosis*, and (2) *B. influenzae*. The last-named organism was non-pathogenic for rabbits. The child manifested no clinical signs of influenza, but it was significant that the ocular inflammation occurred during a time of the year when influenza was rife in New York.

(2) After referring to the investigation of trachoma in Egypt and in Graz by Müller, of Vienna, who found an influenza-like bacillus in 59 out of 155 cases, most frequently in the recent cases, **A. Knapp** details the results of his bacteriological examinations of 120 cases in New York, which came under observation early as a result of systematic school inspection, and usually before the symptoms had drawn attention to the lids. The follicle contents were obtained by expression from 80 cases without previous cleansing of the conjunctiva, and stained in many ways; the only noteworthy result being that in 4 cases a bacillus like that of influenza was found. In 40 cases in which the discharge only was examined, the same bacillus was found in 4 cases. The greatest number of bacilli were found in a typical case of acute trachoma. The author then takes up the question of the identity of this "trachoma bacillus" of Müller with the Kochs-Weeks' bacillus, the influenza bacillus, and the pseudo-influenza bacillus. He says that whereas it cannot be differentiated from the two latter, morphologically, culturally, or by animal experimentation, he believes that it can be certainly distinguished from the first—mentioned by its smaller size and less sharp definition; by its requiring hæmoglobin-containing media for culture; by the transparent dew-drop appearance of the colonies; and by the ease with which its cultivations can be maintained. As zur Nedden has pointed out, he informs us, the true influenza bacillus can produce a primary conjunctivitis; and it seems probable to the author that the presence of this bacillus in his 8 cases out of 120 was "accidental and independent of the inciting agent."

F. W. MARLOW.

(3) **Chaillous** described a case of infection by the *B. perfringens* to the *Société d'ophtalmologie de Paris* on October 11th, 1904. A locksmith, while engaged in his work, was struck in one eye by a piece of metal. Next day the upper lid of the injured eye was oedematous, the conjunctiva was much reddened, and the iris had prolapsed through a small wound in the limbus. The anterior chamber was half-filled with blood. Vision = perception of light. The protruding iris was cut away, and the parts cleansed. The electro-magnet failed to withdraw any foreign body from the injured eye. Cover-glasses smeared with muco-purulent secretion from the wound in the limbus and examined bacterioscopically, showed numerous large bacilli, which yielded positive pictures when stained by Gram's method. Three days after the injury, the eyeball was enucleated, and cultures made from the vitreous humour were found to contain bacilli identical with those mentioned above. The organisms, however, grew only upon

anaerobic media. Inoculated into the eye of rabbits they rapidly set up a purulent infiltration of the vitreous, and the same organism was obtained in pure culture from that humour. The bacillus had all the characters of the *B. perfringens* described by Fraenkel and by Veillon in the year 1893. Chaillous' conclusions are as under: (1) traumatic panophthalmitis may be due to the presence of anaerobic micro-organisms; (2) many of the cases where microbes have been thought to be absent from panophthalmitis might have yielded a different result if anaerobic media had been employed; and (3) in order to be complete, the bacteriological study of all cases of infection of the eye should include a search for both aerobic and anaerobic micro-organisms. H. DE V.

(4) **Morax** reports a case of annular abscess or infiltration (Fuchs) of the cornea, and describes the pathological examination of the affected eye. The patient, a woman aged 47 years, developed congestion of the lungs, associated with delirium and high temperature. Death ensued after the illness had lasted three weeks, and at the autopsy ulcerative endocarditis, with pneumococci, was found. Seven days before death she developed bilateral irido-cyclitis, along with an annular abscess of the right cornea. The right eye was enucleated, under cocaine, three days before the fatal issue. *Pathological and bacteriological examination of the enucleated eye.*—The aqueous humour was found to contain a pure culture of pneumococci, lethal as regards mice and rabbits in forty-eight hours. The same micro-organism, although in smaller numbers, was obtained from the vitreous humour. Meridional sections of the eyeball, hardened in picro-formol and embedded in celloidin, when examined under a low power, showed the existence of two exudations, of which the first lay at the level of the ciliary region, and the second at the posterior pole of the eye anterior to the papilla. The anterior epithelium of the cornea had been shed, except near the limbus, a remark that applies also to the endothelium of Descemet's membrane. The cornea, particularly towards the limbus, showed a diffuse cellular infiltration, affecting more especially the anterior layers. The infiltration, however, attained its greatest development in a zone situated 10 mm. within the limbus. It is important to note that micro-organisms were not found at the level of the infiltration or in the cytoplasm of the polynuclear leucocytes which composed it. The conjunctiva of the limbus and the neighbouring sclera showed cellular infiltration. The periphery of the anterior chamber contained a dense cellular infiltration, including numerous pneumococci. The iris and the ciliary muscle and processes manifested signs of inflammation and exudation, the last-named being continued into the vitreous humour. The retina was the seat of a discrete

infiltration, which in the region of the posterior pole affected especially the nerve-fibre layer. Micro-organisms were abundant. The choroid showed a discrete infiltration. The vessels of the optic papilla seemed to be obstructed by leucocytes.

The sequence of events in the foregoing case, then, was pneumococcal infection of the lung, septicæmia, endocarditis of the mitral valve, and bilateral metastatic ophthalmitis, which as regards the right eye affected particularly the anterior segment and evolved under the aspect of an annular abscess of the cornea, and as regards the other eye the symptoms took the form of an irido-cyclitis of medium intensity. Pneumococci were demonstrated in the mitral vegetation, cardiac blood, and the eyes. Hanke (*Zeitschr. f. Augen.*, 1903, Bd. X, p. 373*) in nine cases of annular abscess of the cornea, has recently isolated a small bacillus, negative to Gram, and producing a green fluorescence upon the usual culture media, and resembling the bacillus proteus fluorescens. He maintains that this organism alone can cause the clinical appearances characteristic of the disease. Morax, however, points out that the affection represents an anatomical reaction to various infections, of which the origin, although usually exogenous, may be, as in the present case, endogenous. Such a reaction may be caused by pneumococci, streptococci, or Hanke's organism. In short, Morax believes, with Fuchs, that the annular abscess in endogenous infections, is due to the proliferation of certain species of bacteria in the anterior chamber, with diffusion of the toxins thereby produced into the cornea. This conclusion is supported by (1) the abundance of micro-organisms found in the anterior chamber, and (2) their absence from the corneal infiltration. S. S.

(5) **Buerger** describes a method whereby the capsules of micro-organisms may be stained, not only in exudations but also in recent cultures. The method, moreover, is said to be so delicate that each capsulated microbe is by its employment found to possess a particular type of capsule. It is as follows. The culture is spread over a perfectly clean cover-slip by means of a drop of diluted serum. The slip is then flooded with Müller's fluid saturated with bichloride of mercury (about 5 %), warmed over a flame for three seconds, washed in water and in alcohol respectively, and then treated with iodine (U.S.P.) for one or two minutes. The iodine is washed off with alcohol, and the specimen allowed to dry. The specimen is next stained (2 to 5 seconds) with aniline water gentian violet, and, finally, is washed with a 2 % salt solution.

* For abstract see THE OPHTHALMOSCOPE, Vol. II, p. 15.

It is mounted in the salt solution, and ringed with vaseline. Instead of the gentian violet, a 10 % aqueous solution of fuchsin may be used.

(6) **Urbahn** has reached the following conclusions, stated in his own words:—(1) Gonococci can grow in common nutritive media. (2) Glycerine agar alone is not sufficient for a differential diagnosis. Jellied blood-serum in connection with glycerine agar may suffice to distinguish gonococci from similar cocci, especially from the meningococci and nearly related varieties. (3) There appear to be bacteriological differences between various stocks of gonococci. (4) It remains to be determined whether these differences exist clinically. (5) Whatever other differences may be found, the three characteristics of form, staining, and relation to pus corpuscles must be possessed by all varieties of cocci to enable them to be classed as gonococci. (6) The varieties hitherto described seem to be related to meningococci. (7) Until it has been determined whether or not the gonococcus is a distinct variety with special characteristics, that name should be reserved for it alone, and the name pseudo-gonococcus be avoided.

(7) To determine the identity of the various groups of micro-organisms **Tertsch** adopted several methods of investigation, such as agglutination and inoculation. He also studied the morphology and the peculiarities of growth and of staining presented by these bacteria. He arrived at the conclusion that the non-virulent diphtheria-like organisms of the conjunctival sac may be divided into three groups:—(1) those whose sera have a high agglutinative power, which are to be regarded as true but non-virulent Klebs-Löffler bacilli; (2) those which grow feebly and show slight powers of resistance only, and which develop a certain amount of acid in bouillon; and (3) those which grow readily, and which produce an abundance of alkali. Tertsch also admits the possibility of there being many transitional forms of the bacteria under discussion.

A. LEVY.

II.—CONGENITAL CONDITIONS.

- (1) **Geuns, Van.**—A case of abnormal artery protruding into the vitreous. (*Geval van nit de papil in het glasvocht dringende arterie-lus.*) *Tijdschrift v. Geneeskunde*, 1903, No. 17.
- (2) **Terrien, F.**—Coloboma of the uveal tract and luxation of the lower jaw into the orbit of the same side: anatomical examination. (*Colobome du tractus uveal et luxation du maxillaire inférieur dans l'orbite du même côté.*) *Recueil d'ophtalmologie*, XXV (1903), p. 328.

- (3) **Ball, James Moores.**—Some rare ophthalmic cases. *American Journal of Ophthalmology*, December, 1903.
- (4) **Moissonier (Tours).**—A case of congenital aniridia with subluxation of the lenses. (Un cas d'aniridia congénitale avec subluxation des cristallins.) *La Clinique Ophtalmologie*, 25 décembre, 1903.
- (5) **Spengler, E.**—Is corneal astigmatism hereditary? (Ist Hornhautastigmatismus vererblich?) *Klin. Monatsbl. f. Augen.*, Februar, 1904, p. 164.
- (6) **Werncke, Th.**—Pterygium and pseudo-ptyerygium of the upper lid. (Pterygium und Pseudopterygium am oberen lide.) *Klin. Monats. f. Augenheilk.*, Februar, 1904, p. 126.
- (7) **Duyse, Van.**—The general etiology of ocular malformations. (Etiologie générale des malformations oculaires.) *Archives d'ophtalmologie*, février, 1904.
- (8) **Bartels, M.**—On the origin of vicarious contraction of the frontalis muscle in congenital ptosis. (Ueber den Eintritt der vikariierenden Frontaliskontraktion bei kongenitale Ptois.) *Zeitsch. für Augenh.*, Mai, 1904.
- (9) **Erdmann, P.**—A contribution to the study of congenital distichiasis. (Ein Beitrag zur Kenntnis der Distichiasis congenita.) *Zeitsch. für Augenh.*, Mai, 1904.
- (10) **Lewis, G. Griffen.**—Hereditary ectopia lentis, with reports of cases. *Archives of Ophthalmology*, May, 1904.
- (11) **Miller, G. Victor.**—A case of cyst of the orbit. *British Medical Journal*, 2nd July, 1904.
- (12) **Clark, Somerton.**—Case of cryptophthalmos. *British Medical Journal*, 9th July, 1904.
- (13) **Toufesco.**—A note on congenital aphakia. (Note sur l'aphakie congénitale.) *Annales d'oculistique*, T. CXXXII, p. 107, août, 1904.
- (14) **Gilbert.**—Upon medullated nerve-fibres of the optic disc. (Ueber markhaltige Nervenfasern der Papilla nervi optici.) *Klin. Monatsbl. f. Augenheilkunde*, Juli-August, 1904.
- (14A) **Millikin, B. L.**—An unusual dilatation of the superior temporal artery and vein of the retina. *Archives of Ophthalmology*, September, 1904.
- (15) **Chance, Burton.**—Total coloboma of the optic disc without affection of the choroid; total irideremia; ectropion uvea; and retained pupillary membrane. *American Medicine*, 1st October, 1904.
- (16) **Grimsdale, H. B.**—Unusual consensual light reflex. *Trans. Ophthal. Soc.*, Vol. XXIV (1904), p. 323.

- (17) **Dawnay, A. H. Payan.**—**Anophthalmos.** *Trans. Ophthalm. Soc.*, Vol. XXIX (1904), p. 304.
- (17A) **Jennings, J. Ellis.**—**Pigment streaks in macula region of both eyes.** *Annals of Ophthalmology*, October, 1904.
- (18) **Werner, L.**—**Congenital defects of the ocular movements combined with peculiar associated movements of the eyes.** *Trans. Ophthalm. Soc.*, Vol. XXIV (1904), p. 305.
- (19) **Eason, H. L.**—**Persistent patent hyaloid artery.** *Trans. Ophthalm. Soc.*, Vol. XXIV (1904), p. 324.
- (20) **Harman, N. Bishop.**—**Multiple anomalies in a child.** *Trans. Ophthalm. Soc.*, Vol. XXIV (1904), p. 325.

(1) **Van Geuns** observed an artery springing from the disc and projecting into the vitreous. After running straight forward for a distance of about 4 millimetres it curved backward and thus formed a loop, the recurrent part entering a temporal inferior arteria retinalis. This loop could not be a persistent hyaloid artery, for this during its existence never shows this peculiar shape. Two other possibilities are given: first, that the anomaly is a high degree of the often-observed loop-formation of the vessels in the retina; secondly, that it is the result of abnormal development of the vascular system of the retina. According to Shultze, the retinal vessels originate from the choroid, and only in a later stage do they communicate with the hyaloid artery. It is supposed that the above condition is a communication of one of the retinal veins with a backward-running branch of the hyaloid artery, which has not disappeared during later development. The condition seems to be a rare one, the present being the seventh case recorded. G. F. ROCHAT.

(2) **Terrien's** case was one of typical unilateral coloboma of the uveal tract, presenting several interesting points as regards the orbit and the eyeball. The coronoid process of the inferior maxilla was luxated into the orbit, and the thickened floor of that cavity contained within its substance a molar tooth. The microphthalmic eye was colobomatous, and the anatomical alterations affected the sclera, uveal tract, retina, and crystalline lens. Besides the inferior coloboma, there was a large cystic pouch at the level of the posterior pole. The internal fold of the secondary ocular vesicle was incompletely invaginated and adherent to the posterior capsule of the lens, separated from the latter only by a vascular layer, the remains of the vascular capsule of the crystalline. Moreover, the fold was invaginated upon itself, and presented cystic spaces.

From this adhesion had resulted the alterations in the level of the posterior zone of the crystalline. They consisted in the presence of sub-capsular epithelium, and in involutional alterations at this level of the fibres of the crystalline lens.

H. DE V.

(3) **Ball** reports several interesting cases. The first is one of bilateral congenital anophthalmos, in which a small, hard lump, conjectured to be a rudimentary eyeball, lay in front of each ear. Ball's second case is one of blood-staining of the cornea, observed in a man, 37 years of age, who had received an injury to the affected eye two years previously. His last case, met with in a woman, aged 22 years, is one of melanosarcoma of the skin of the lower eyelid, in close connection with the tendo oculi. It appeared to have originated from a congenital, pigmented mole, and took the form of a fluctuating, oval tumour, measuring 6 mm. by 8 mm. This was diagnosed as a dermoid cyst, and its contents were evacuated by an incision. The cyst refilled, and was eventually excised. A microscopical examination showed the mass to be a melano-sarcoma.

✶ (5) **Spengler** gives a table of five generations, clearly showing astigmatism to be hereditary. Out of 52 persons, 56 eyes (59.6 %) had direct astigmatism, 4.2 % astigmatismus obliquus, 19.2 % astigmatismus aversus, and only 17 % were free from astigmatism. Most of the families included in the table were Jewish.

A. BIRCH-HIRSCHFELD.

(6) The case was that of a boy of 12 years with healthy eyes. **Werncke** agrees with Schapring in considering the formation to be congenital, possibly arising from amniotic adhesions.

(7) It is impossible to review adequately **Van Duyse's** philosophical article, which should be read in the original by those interested in the study of malformations of the eye.

(8) **Bartels'** case is that of a female, 16 weeks old, the child of normal parents and showing no other abnormality except an indication of adhesions between the second and third toes. There was well-marked ptosis on both sides. On looking upwards, the palpebral aperture was opened only 2 mm. by means of strong contractions of the frontalis muscle; the child at the same time throwing its head slightly backwards. There was also an inability to roll the eyes upwards, as this movement was never seen. There was slight blepharophthalmosis and epicanthus. The ptosis was most likely due to a peripheral defective development either of the levator muscle or of its nerve. In previously reported cases of this condition contraction of the frontalis muscle is stated to have shown itself at a much later period, and to have arisen only as the

result of voluntary attempts at seeing. In Bartels' case this certainly did not happen, since in this child there was already great hypertrophy of the frontalis and the contractions were most powerful. The mother stated that it could open its eyes slightly when about eight days old. This shows, as Mauthner has already demonstrated, that the elevation of the lid is a purely reflex act, and that the frontalis simply replaces the levator, and that volition has nothing to do with it.

A. LEVY.

(9) **Erdmann** distinguishes between the two terms trichiasis, by which he means an irregularity of the cilia, the result of pathological processes, and distichiasis, the occurrence of two rows of cilia in an otherwise normal lid, which is practically always a congenital condition. He refers to the previously reported cases of this condition, and cites cases of his own which occurred in three generations of the same family, viz., in grandmother, mother, and child. In all cases the second row of lashes occupied the position of the openings of the Meibomian glands, and consisted of short soft hairs, of which some only were pigmented. They were directed backwards, and caused considerable conjunctival and corneal trouble. Triangular pieces were excised from the lids of mother and child for microscopical examination. The various parts of the lid were found to be normal, except for the poor development of the Meibomian glands, which ended in the follicles of the hind row of cilia. The treatment advised is removal of the hair-bearing portion of the lid and transplantation of mucous membrane.

A. LEVY.

(10) After reporting seven cases of ectopia lentis in one family, **Lewis** refers to nine other well-authenticated cases in the same family, making sixteen in all in six successive generations. The usual rules for the distinction between congenital and spontaneous dislocation are not carried out in the cases reported in this article, as both upward and downward, partial and complete displacements are observed in the different generations. One of the patients who had formerly an upward displacement of both lenses, has now a downward displacement of one and a total displacement of the other, which proves, the writer believes, that ectopia lentis may be a cause of spontaneous displacement.

The pronounced symptoms of ectopia lentis preclude a wrong diagnosis. If the lens is partially dislocated, a person may have two different qualities of refraction in the same eye. Astigmatism may also exist, due to the fact that the lens refracts light unequally in different meridians. The amount of improvement in vision by proper refractive cor-

rection will depend upon the degree of dislocation and the amount of mobility of the lens. Complete or partial loss of accommodation exists according to the degree of dislocation. The impact of the lens against the uvea may produce an irido-cyclitis, resulting in detachment of the retina, glaucoma, or sympathetic trouble in the other eye: also pressure against the cornea of a lens dislocated into the anterior chamber may produce ulceration of that membrane.

JOSEPHINE W. HILDRUP.

(11) **Miller** successfully removed a cyst, of about the size of a pigeon's egg, from the orbit of a child, aged 6 years. Its exact nature was not determined, but Miller surmises that it was of congenital origin.

(12) A Mohammedan child, aged six months, was brought to **Clark** on account of the condition of her eyeballs, which were completely covered with skin. There were no eyelashes. The eyeballs, which were prominent, were under muscular control. A horizontal incision was made over the left globe, and it was then found that the conjunctival sac was complete only towards the lacrymal gland and in the internal and lower segment. The cornea was covered with a loosely-attached membrane, but no pupil could be seen when this investiture was dissected away. The child, who was born at term and presented no signs of syphilis, had also webbed fingers.

(13) **Mdlle. Toufesco** records a case of an eye with typical congenital coloboma of the iris and choroid, 10 D. of hypermetropia, and absence of accommodation. The anterior chamber was deep, but the iris was not tremulous. The edge of the lens could not be seen at the lower part of the coloboma, and Sanson's images appeared to be absent, but **Tscherning** was able, by using a very strong light, to demonstrate that they really were present. **Toufesco** gives a *résumé* of the cases of congenital aphakia which have been recorded, from a study of which and of experimental work on the subject, she concludes that although the embryonic lens may not be formed at all, such cases are exceptional and always associated with bad development of the anterior segment of the eyeball; and in the majority of instances the lens is formed, but later undergoes degeneration and absorption, the process being purely pathological.

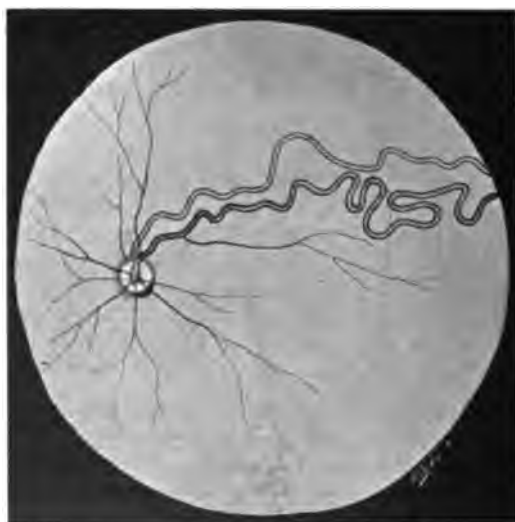
R. J. COULTER.

(14) **Gilbert** reports a somewhat unusual case in a man, aged 49 years, where the optic disc of both eyes was completely covered by opaque nerve-fibres. A white, oval, glancing mass, several times as big as the papilla, covered the optic disc,

concealing the lamina cribrosa and the origin of the retinal arteries and veins. The sight of the right eye was $\frac{2}{4}$ and that of the left eye $\frac{2}{7}$ normal. The author surmises that with the microscope changes might be found in the fovea centralis to account for the defective sight.

J. F. S.

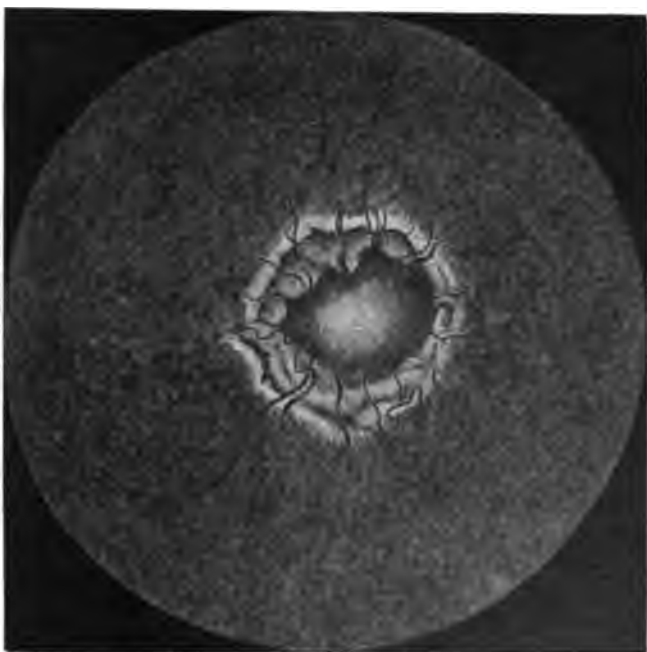
(14A) **Millikin** found the curious (?) congenital anomaly, depicted in the accompanying illustration, in the left eye of a lad, aged 15 years, who was suffering from symptoms of accommoda-



tive asthenopia. In the neighbourhood of the dilated vein were some slight evidences of choroiditis. The state of the vessels persisted during the period of about four years that the lad remained under observation.

(15) **Chance** reports several congenital anomalies of the eyes, as under. (1) *Total coloboma of the optic disc*.—A child, aged 6 years, the offspring of healthy parents, was brought with a convergent squint affecting her left eye, which was amblyopic. Media clear. Upon ophthalmoscopic examination, the optic disc presented the curious appearance shown in the drawing. It was about four times larger than normal, irregularly circular in outline, and devoid of the usual definite rings. The appearance, indeed, was reminiscent of that of a crater. The central portion was funnel-shaped, resembled a mass of cotton-wool, and could not be defined with any glass. A narrow shelf-like projection lay inside the rim of the disc. Numerous vessels crept along the sides

of the cone, and bent over the overhanging border of the gap to be distributed to the retina. Between the arteries and the veins it was difficult or impossible to distinguish. Small clumps of pigment encircled the coloboma. (2) A well-



marked instance of *ectropion of the uvea* affecting both eyes of a girl, aged 16 years. (3) Total *bilateral irideremia* in a girl of 11 years, who also suffered from nystagmus, posterior polar cataract, and microphthalmos. V. = 5/35. (4) Three cases of *persistent pupillary membrane*.

(16) When one eye of **Grimsdale's** patient was covered, its pupil dilated, and at the same time the other eye descended slowly through a distance of about 2 mm. On removing the covering hand, the pupil of the first eye contracted, while the other eye slowly resumed its proper position. There had been no injury to the head, as in other reported cases of this peculiar condition.

(17) **Dawnay's** patient, a female, aged three months, had apparently no eyeball on the right side, although it is important to note that the examination was not conducted under the influence of a general anæsthetic. The palpebral fissure measured about three-eighths of an inch in length, and the conjunctival sac was correspondingly small.

(17A) **Jennings'** patient, a boy, aged 12 years, suffered from a nervous twitching of the eyelids, associated with slight hypermetropic astigmatism. V. was 5/5. Upon ophthalmoscopic examination, the macular region of each fundus was



found to present pigment striæ such as are shown in the illustration. The striæ were of a dull, reddish-brown colour, varied in width, and lay beneath the retinal vessels. They often manifested sharp bends, and their borders were jagged. There was no history of injury to the eyes.

(18) In a girl of 12 years **Werner** found ptosis and rotary nystagmus associated with some curious congenital defects in movement of the eyeballs. Briefly, there was loss of power in the external muscles supplied by the third nerve, complete in one eye and incomplete in the other. There was, further, some loss of power in the external recti. It is of interest to note, as bearing upon the etiology of the condition, that two of the affected muscles, exposed during an operation, were found to be normal. Presumably the others were also normal.

(19) **Eason** found two hyaloid vessels ending in a convolus-like extremity apparently attached in the region of the ciliary body below the iris. It may be noted that in their course through the vitreous the vessels were enclosed in a loose, smooth, greyish-white sheath. The affected eye was divergent, nystagmic; and had poor sight.

(20) **Harman** reports the case of a child, five years old, who presented many anomalies including, among other things, coloboma of each upper lid, sclero-corneal dermoids, coloboma of the iris and choroid, supernumerary ears, macrostomia, and a fovea sacralis ("post-anal dimple," so-called).

III.—TREATMENT.

(First Notice.)

- (1) **Coppez, Henri.**—Jequiritol. *La Clinique Ophtalmologique*, January 25, 1903.
- (2) **Bariklow.**—Massage in the treatment of chronic affections of the conjunctiva. (Masage pri letshenii chronisheskich sabolewanj soedinitelnoi obolotski glasa.) *Thèse de Saint Petersburg*, 1903, and *Rev. générale d'ophtalmologie*, 31 octobre, 1904.
- (3) **Colasuono, S.**—Upon the treatment of corneal ulcers. (Zur Behandlung der Hornhautgeschwüre.) *Neue Therapie*, No. 8, 1903.
- (4) **Darier, A.**—Two new and absolutely painless preparations of silver, argyrol and collargol. Indications for their employment in ophthalmic practice. (Deux nouvelles préparations d'argent absolument indolores: argyrol, collargol; leurs indications en thérapeutique oculaire.) *La Clinique Ophtalmologique*, 25 avril, 1903.
- (5) **Leloutre (Troyes).**—The favourable influence of collargol on infectious ulcers of the Cornea. (Influence favorable du collargol sur les ulcères infectieux de la cornée.) *La Clinique Ophtalmologique*, 10 mai, 1903.
- (6) **Fromaget, Camille.**—Treatment of relapsing hæmorrhages into the vitreous by hypodermic injections of gelatine. (Traitement des hémorrhagies récidivantes du vitré par les injections hypodermiques de sérum gélatiné.) *Annales d'oculistique*, T. CXXIX (1903), p.165.
- (7) **Vian (Toulon).**—The treatment of purulent Ophthalmia by concentrated solutions of permanganate of potash. (Du traitement de l'ophtalmie purulente par les solutions concentrées de permanganate de potasse.) *La Clinique Ophtalmologique*, 10 juin, 1903.

(1) After describing the enthusiasm with which jequirity was received on its introduction by de Wecker in 1882, and the subsequent reaction against it, Coppez states that the infusion has been in regular use in his *clinique* for all cases of granular conjunctivitis complicated by pannus.

The active principle of jequirity is abrine, discovered in 1884 by Warden and Waddel, but only worked out as to dosage by Röhmer, who also prepared an anti-abrine serum according to the formula of Behring in the case of diphtheria. The preparation of abrine has been given the name of jequiritol, and the serum is called jequiritol serum.

As to toxicity of abrine, antitoxic power of the serum, immunity of the conjunctiva to abrine, preventive and curative action of the serum, etc., all of which subjects are touched upon by Coppez, the reader should refer to Römer's paper in *Graefe's Archiv*, Vol. LII., 1901. Röhmer's work has not received very much notice, but papers by de Wecker, de Lapersonne, Saffner, Hummelsheim, Maklakow, and Davies are quoted, which show that jequiritol has been used in the treatment of eczematous keratitis, parenchymatous keratitis, corneal maculae, follicular conjunctivitis, and, of course, trachoma. In some cases, it has been necessary to resort to the use of the serum.

The author then proceeds to details of his own method of using jequiritol in some 100 cases of granular conjunctivitis, seen in about eight months. A jequiritol outfit is prepared by Merck. The box contains sealed and numbered phials, each containing 1 c.c. of jequiritol. Each number represents a strength 10 times more active than the preceding number. There are also several tubes of jequiritol-serum and a pipette graduated in milligrammes. Before applying the jequiritol 5% cocaine is instilled. Both eyes are treated. The simultaneous use of corrosive sublimate is contraindicated, as the latter precipitates toxalbumoses. As an example, the following routine is stated: first day, 10 m.g. of No. 1; daily increase of dose by 10 m.g. up to 50 m.g.; pass on to No. 2, increasing daily from 10 up to 50 m.g., and so on. When reaction is produced, wait till it disappears, and then resume with the dose which produced jequirity ophthalmia. As to the number of reactions, Coppez usually contents himself with two, and has never been able to obtain more than three. During the first twelve hours of jequirity ophthalmia there is considerable pain, but the patient is not usually confined to bed. The preauricular gland is but little enlarged, the palpebral œdema does not extend to neighbouring parts, and the cornea does not lose its polish. After 24 hours, the reaction begins to subside. Coppez has really only once had to employ the

jequiritol serum on account of the severity of the reaction. The results have been exactly those obtained by the use of jequirity infusion, *viz.*, a rapid disappearance of pannus, healing of corneal ulcers, and smoothing of the conjunctiva.

Coppez then points out that he uses the jequiritol treatment mainly for suppressing the acute exacerbations of trachoma, and follows up with electrolysis and surgical procedures of the well-known type. He has not to any extent used the classical reaction of jequirity except in granular cases, but next proceeds to indicate how, subject to further investigation, there appears to be a great future for the employment of weak applications of jequiritol, such as will not set up reaction. Several times he noticed in patients with not very severe granular conjunctivitis that after a few days instillation of jequiritol No. 1 the acuteness began to diminish without any jequirity reaction having come on. This led to further experimentation with jequiritol No. 1. A fleshy granulation on the corneal summit in a case of parenchymatous keratitis disappeared in a week after four 10 m. gr. instillations of jequiritol No. 1. Undoubted improvement has taken place in some cases of wearisome phlyctenular conjunctivo-keratitis. Coppez has also used jequiritol No. 1 with advantage in chronic conjunctivitis, redness of the conjunctiva after an extensive burn, and in pseudo-ptyerygium. Finally, after thus reviewing the different uses of weak doses of jequiritol, he hopes, later on, to call attention to its advantages in the treatment of extensive wounds, and in tuberculous and epitheliomatous ulcers, and to establish and to limit the real indications for jequiritol in strong and weak doses.

ERNEST THOMSON.

(2) **Bakrilow** warmly recommends massage of the conjunctiva in cases of chronic or granulous inflammation. He practises the massage with a small glass rod. He claims that by these means trachoma can be cured without the production of cicatrices.

A. MAKLAKOW.

(3) **Colasuono** recommends pure thigenol in the treatment of corneal ulcers, and quotes an illustrative case of hypopyon-keratitis in a woman of 50 years. Thigenol is especially useful in eye work on account of its diffusibility.

MAX P.

(4) This is an enthusiastic article by **Darier** on collargol and argyrol, especially the latter. The author has had less experience with collargol, and is not quite so sure of his ground, but his praise of argyrol in conjunctival and lacrymal affections is unstinted. In the prophylaxis of ophthalmia neonatorum he suggests its systematic use. Argyrol is now so well known

by ophthalmologists that it seems hardly necessary to quote this article at length. Instillation of 25% argyrol between the eyelids, and injection of 10 % into the lacrymal sac are quite painless, *provided the solutions be freshly prepared*. The patency of the nasal duct can be proved or disproved by the presence or absence of brown colour on the handkerchief when the nose is blown after injection of argyrol into the sac. The author's indications for the strength of collargol solution are less definite. He appears to use only 1% for injection into the lacrymal sac. He has tried subconjunctival injections of 1-100, 1-500, and 1-1,000, but only admits that the results are "encouraging." In spite of the title of the paper, Darier admits that collargol is "sometimes a trifle more irritating than argyrol."

ERNEST THOMSON.

(5) **Leloutre** recounts three cases of septic corneal ulcer with hypopyon, treated with collargol. The first and most severe may be summarized as under : very extensive corneal ulcer, hypopyon one-half, iritis, photophobia, and pain. *Treatment*.—Thorough cleansing with sublimate, subconjunctival injection of cyanide of mercury, evacuation of hypopyon, antiseptic dressing. As the result of this, the condition got worse ; four days later Leloutre resorted to the following treatment : simple washing with sublimate, coating the eyelids and neighbourhood with 15 % collargol ointment, antiseptic dressing ; frictions for ten minutes five times daily at the bend of the elbow and the armpit with collargol ointment. The ulcer steadily healed under this treatment, which was stopped after eleven days. Two days later the patient "appeared to have neither more nor less than a very extensive leucoma," and was dismissed from treatment.

ERNEST THOMSON.

(6) At the present moment, when injections of gelatine are said to give rise to tetanus and to have no special influence upon the coagulability of the blood, **Fromaget's** observations are specially interesting. That surgeon has treated four cases of relapsing hæmorrhage into the vitreous by the hypodermic injection of gelatine, in each instance with good results. He now gives details of two of the cases so treated, since they have been watched for longer than the others. The facts are as under : (1) A patient, aged 24 years, had had three vitreous hæmorrhages in the course of about two years, and when he saw Fromaget there was a fresh hæmorrhage in the left eye. There was no fundus reflex ; the action of the pupil was feeble. The other eye, the sight of which was normal, showed a number of flame-shaped hæmorrhages in the region of the ora serrata. As the result of living abroad in an unwholesome

climate and of slight dysentery, the patient was anæmic. Treatment included leeches to the temple, and iodine and quinine internally. Six months later the patient found to his dismay that the sight of the right eye was affected. The left eye was in *statu quo*. Heurteloup's leech was applied to each temple, and 50 c.c. of 2 % gelatine was injected beneath the skin of the abdomen, an operation repeated three days later. Seven months afterwards, the sight of the right eye was good, although traces of old hæmorrhages could be found in the retina. The left eye was the seat of retinal detachment. Two further injections of 2 % gelatine, each of 100 c.c., were made. When the patient was communicated with, three years and ten months later, it was ascertained that the condition of the eyes had undergone no change. (2) A man, aged 23 years, was completely blinded as the result of bilateral vitreous hæmorrhage, which had relapsed on several occasions. Many kinds of treatment had been tried, but without success. Six injections, each of 150 c.c. of 2 % gelatine, were made at intervals of three or four days. Both eyes recovered their sight within two months. The constant current was then employed for about ten days, in order to consolidate the cure. The improvement was found to be maintained when the patient was heard of three and a half years later. S. S.

(7) Vian throws nitrate of silver on one side; takes no notice of the newer silver salts; and forces the claims of permanganate of potash, which he applies to the lids in purulent ophthalmia as a 10 % solution.

ERNEST THOMSON.

IV.—EYE AFFECTIONS IN PLUMBISM.

- (1) Snell, Simeon.—A case of optic atrophy (primary) due to lead. *Trans. Ophthalm. Soc.*, Vol. XXIV (1904), p 184.
- (2) Ogg, Theodore A. W.—A case of acute plumbic encephalopathy followed by muscular paralysis and optic neuritis. *Clinical Journal*, 30th November, 1904.
- (3) Prioux, Ch.—Primary ocular paralysis in saturnine intoxication. (Paralysie oculaire primitive dans l'intoxication saturnine.) *Bull. et Mém. de la Société française d'Ophthal.*, 1904.

(1) A lad, 16 years of age, who had been employed as a file cutter for about three years, developed bilateral optic atrophy, with V. 2/60 to 1/60. In the course of his occupation he was engaged in handling lead, for he had to break up old lead beds

(on which the files are placed) for melting purposes. Other signs of saturnism included a blue line over one incisor tooth and abdominal pains. No constipation or wrist-drop.

(2) **Ogg's** patient, a woman aged 23 years, had worked for upwards of nine years in a lead factory, and during that time had suffered from anæmia, amenorrhœa, and occasional attacks of colic and constipation. Suddenly she was seized with umbilical pains, headache, vomiting, and vertigo, succeeded by delirium and loss of consciousness (encephalopathy). When consciousness returned after having been lost for six days, the patient was found to have both forearms and one leg paralysed. Optic neuritis was also present. The neuritis led to optic atrophy and to complete loss of sight.

(3) A man, aged 40 years, who had been employed as mixer of paint for 24 years, suddenly developed diplopia. No obvious symptom of plumbism was present. **Prioux** found paralysis of one external rectus muscle, slight pallor of the optic discs, changes in the visual field of one eye, and defective sight (nebulæ). Two months later there was exophthalmos of the eye first affected, together with paralysis of the external rectus of the other eye. **Prioux** points out that the appearance of ocular mischief may antedate any other symptoms of lead-poisoning, as in the present case. It should be added that during the course of the illness a faint lead line appeared upon the patient's gums.

S. S.

V.—EYE-STRAIN, etc.

- (1) **Mitchell, S. Weir.**—The relation of neuralgic headaches to storms. *Trans. College of Physicians of Philadelphia*, 1903, p. 71.
- (2) **Gould, George M.**—Eyestrain and civilisation. *American Medicine*, October 10, 1903.
- (3) **Harman, N. Bishop.**—Headaches. *Medical Press and Circular*, November 18, 1903.
- (4) **Husband, A. L.**—Agoraphobia and some allied conditions. *Medical Press and Circular*, December 9, 1903.
- (5) **Van Dijk, L. T.**—Statistics about myopia not caused by over pressure at school. (Statistisch onderzoek der met door overlading met schoolwerk outstane by ziendheid.) *Thesis for the degree of M.D. Amsterdam*, 1904.

- (6) Gould, George M.—History and etiology of "Migraine." *Journal of American Medical Association*, Vol. XLII, Nos. 3 and 4, 16 and 23 January, 1904.
- (7) Hinshelwood, James.—Ocular and other forms of chronic Headache. *Glasgow Medical Journal*, January, 1904.
- (8) Trousseau, A.—Ocular headaches. (Les maux de tête d'origine oculaire.) *La Presse Médicale*, 23 avril, 1904.
- (9) Snell, Simeon.—Eye-strain as a cause of headaches and other neuroses. *Lancet*, 30 April, 1904.
- (10) Dana, Charles L.—Eye-strain and the psychoses. *Medical News*, July 30, 1904.
- (11) Cutler, Colman W.—Migraine and sick headache. *Medical News*, July 30, 1904.
- (12) Sachs, B.—The relation of epilepsy, chorea, and other motor disturbances of the nervous system to eye disease. *Medical News*, July 30, 1904.
- (13) Sutton, S. W.—Eye-strain as a cause of headache. *Lancet*, August 20, 1904.
- (14) Phillips, William Linton.—Eyestrain as a causative factor in sinusitis. *American Medicine*, 17th September, 1904.

(1) Weir Mitchell has satisfied himself that certain migraines are due to storms. Eye-strain is rarely the primary trouble, although it may add to the number and exaggerate the force of attacks.

(4) After going carefully into the probable etiology of the conditions from the optical, physiological, anatomical, and physical standpoints, Husband draws the following conclusions:—

1. Agoraphobia, claustrophobia, and acrophobia are more or less allied conditions attributable to analogous causes.

2. Agoraphobia and claustrophobia are directly determined by errors in the visual apparatus—chiefly refractive. The former is usually associated with myopia, and the latter with hypermetropia. Astigmatism and asthenopia may be associated with either.

3. Acrophobia is generally due to (a) lack of training and experience in the visual measurement of distance in the downward direction; (b) loss of acquired power sequential to some condition of lowered vitality, e.g., anæmia, neurasthenia, senility.

4. Agoraphobia and claustrophobia, but not acrophobia, are most common in persons of neurotic temperament and tendencies.

5. Neurasthenia and similar conditions do not necessarily cause any of these conditions, nor are these conditions always characteristic of neurasthenia; but neurasthenia, plus refractive errors, usually causes either agoraphobia or claustrophobia.

6. All the conditions become much exaggerated under any low state of health.

(5) **Van Dijck** used for his investigations the register of Professor Straub's polyclinic in Amsterdam, which is frequented by the poorest classes, with whom there can be no question of over pressure at school. The report contains the following conclusions arrived at from 5,021 eyes. Low degrees (up to 6 D.) of myopia are certainly not infrequent among these people, who show as many high myopes as the more educated classes. The myopes of the poorest classes, even when their eyes show no other abnormalities, have worse vision than the better situated. Opacities of the cornea are very frequent among them. Van Dijck holds that maculæ of the cornea predispose to myopia, considering that if one eye only has an opacity, this shows in the majority of cases the strongest refraction. This may be the result of the patient being compelled to keep his work near to the eyes to get larger images in the retina. Bad vision without apparent reason may cause myopia in the same way. Astigmatism predisposes to a low degree of myopia.

Van Dijck confirmed the observation that high myopia creates a predisposition to detachment of the retina, the danger being greatest between 30 and 40 years. The myopic person's divergent squint is four times as frequent as convergent, the latter being almost restricted to cases of low myopia with little difference between the eyes.

G. F. ROCHAT.

(6) After a detailed review of the history and literature of the subject from the very earliest times, with special reference to its alleged etiology, and a description of the "typical attack," **Gould** reiterates and emphasizes the opinion that "migraine is but one of the manifestations and results of eye-strain."

F. W. MARLOW.

(7) The condition of the eyes giving rise to headache is fully discussed, and the treatment indicated.

C. D. M.

(8) **Trousseau** reports several cases of severe headache, including one associated with insomnia, relieved by correction of errors of refraction.

H. DE V.

(9) **Snell's** conclusions are as under: 1. That eye-strain is the cause of a large proportion of headaches, often of a very aggravated character. 2. That various other neuroses are

met with in association with headache, and among these may be mentioned the following: mental depression, nausea, indigestion, vomiting, insomnia, giddiness, choreiform movements of the eyelids and face, etc. 3. That relief is afforded to these conditions by correcting the error of refraction, which can be ascertained only after careful examination. 4. That for such examination a mydriatic is absolutely essential. 5. That most frequently no complaint is made of defect of vision. 6. That the ametropia is frequently of low degree, 61.2% of my cases needing 0.75 D. cyl. and weaker. 7. That a cylinder of 0.25 D. is of great value. 8. That anisometropia is frequently present and requires proper adjustment. 9. That in a certain number of cases the muscle balance is faulty and necessitates the prescribing of prisms.

(10) Dana sets out to enquire what part, if any, eye-strain plays in the production of psychoses—that is, morbid mental states. Psychoses may be divided into the major forms, which include insanities, and the minor, which include hysteria, neurasthenia, sexual perversions, and so forth. With regard to eye-strain as a cause of insanity, the author expresses his scepticism. At the same time he has seen a few cases in young and earnest students where eye-strain brought on, not migraine or headache especially, but a species of mental confusion and exhaustion, so that the patients could no longer read, or study, or remember. This condition was accompanied with apathy and lack of interest in sports and amusements. Recovery quickly ensued, as a rule, after rest and the use of suitable glasses. Dana, again, is familiar with rare cases occurring in hard-working men in the forties, where the onset of presbyopia is associated with a condition of mental depression and irritability amounting to a kind of mild melancholia. As to eye-strain and the minor psychoses, Dana can only say that “after sixteen years of watching I have found hardly any cases in which eye-strain is an important and direct factor in establishing even a minor psychosis, though it modifies its symptoms and secondarily adds to the disturbance. For example, in the hysterical, paralysis of the ciliary muscles may cause microscopy, spasm may cause macroscopy, and accommodative disturbances may cause polyopia.” Finally, Dana suggests ironically that “glassing” has itself become something of a minor psychosis.

(11) In the course of a thoughtful article Cutler points out that it is a common experience to find migraine in many members or even generations of a family. It is equally common to find ocular defects handed down in families. Putting these facts together, there is a fair basis for the as-

sumption that sick headache, having all the clinical features of migraine, is often a reflex neurosis of ocular origin.

(12) The dependence of motor neuroses upon disease of the eye has, in **Sachs's** opinion, been greatly exaggerated. He agrees with the finding of the Stevens Commission, appointed several years ago to investigate fourteen test cases, when they said that not a single instance could be cited in which the cure of genuine epilepsy had followed the correction of refractive or muscular errors. Sachs does not know "of a single case in which epileptic seizures have been altogether inhibited or even diminished in number by the wearing of glasses, by the cutting of muscles, or by any other ocular measures which have been adopted." Ranney's recent contribution ("Ten instructive cases for the general practitioner, proving the powerful influence of eye-strain") is severely criticised. Gould's attempts to explain the non-success of the experiments carried out at the Craig Colony for Epileptics (*see OPTHALMOSCOPE*, October, 1904, *p.* 432) are also handled in a drastic way. What has been said of epilepsy applied with equal force to the relation between eye-strain and chorea. The case is however different with respect to habit-chorea (habit-spasm), for that curious affection may now and then be caused by eye-strain. Sachs ends his communication with the words we quote below: "Summing up all that can possibly be said with due regard to truth, it may be stated that the relationship between ocular affections and epilepsy, chorea, and convulsive tic, may be a close one in the minds of some 'faddists,' but it must remain a very remote one in the minds of those who have no special axes to grind and no particular therapeutic territory to exploit."

(14) **Phillips** believes that eye-strain has an important influence in producing and maintaining inflammation of the frontal sinus. He quotes ten cases where the symptoms of sinusitis were relieved by correcting errors of refraction.

REVIEWS.

Ueber artificelle Augenentzündungen. Von DR. E. HERFORD, Oberarzt an der Wilhelms-Heilanstalt in Wiesbaden. 1904. Halle: Verlag von Carl Marhold. Mk. 1.50. (On counterfeit, simulated or artificially induced inflammation of the eyes. By Dr. E. Herford, of Wiesbaden. Halle: Carl Marhold.)

This, which is one of Dr. Vossius' collection of occasional pamphlets of general medical interest, deals with inflammations

of the eye, induced for special reasons by the patient himself or at his own instigation. Self-inflicted injuries to the eyes have been common at all times, partly on account of the ease with which inflammation of this organ can be caused, partly from the sympathy that it excites, and in part also owing to the facility with which recovery can be, in many cases, effected by simply ceasing to apply the irritant, though sometimes, owing to ignorance, permanent damage is inflicted. Malingering may often be observed in astute and precocious children, either for the purpose of escaping punishment or to avoid the drudgery of school work. It is still more common in the Army, where its discovery often—especially, of course, in those countries where conscription is in force—develops into a game of skill between the conscript and the military doctor. Dr. Herford gives some amusing instances of obstinate cases which resisted all ordinary remedies, in men who kept a fragment of copper sulphate or mitigated nitrate of silver under the nail of the thumb or big toe, and of other cases in which the whole ward was turned out naked in the middle of the night, and marched into another room where fresh bedding was supplied, with the result that on examining the old beds various irritants were found concealed. The Russian doctors are, as might be expected, very familiar with this kind of induced inflammation. In the Warsaw district alone an Army surgeon stated some years ago that there were 235 suspected cases, in 16 of which it was discovered. B. Talko, again, states that in 1882, amongst 491 Russian conscripts, 59 or 12 per cent. of those that were rejected suffered from diseases of the eyes, and of these, no less than one-half had cataract self-produced by the penetration of the eye with needles, knives, and, it is said, the application of leeches, though this seems a questionable cause. Most of these were Jews, and it throws a lurid sidelight on the austerities of military life in Russia, when such means are practised to escape being drawn into the service. Another great group of malingerers is to be found amongst those who have policies in Insurance Offices, the second eye being sometimes irritated to suggest the supervention of sympathetic inflammation. Inoculation with the pus of infectious diseases is sometimes practised, the results being sometimes more serious than the patient anticipates. Hysteria is accountable for a certain number of cases, the most diverse substances, such as hair, wool, barley awns, coke, and "crabs' eyes," being thrust under the upper lid, and remaining in the superior conjunctival fold for weeks or even for years, exciting, of course, more or less inflammation, and not infrequently fleshy outgrowths of the conjunctiva. The diagnosis may often be established by observing the effects of remedies, or by the use of the microscope, or by the circumstance that one eye alone is always affected, or that the disease

is ameliorated when the patient is admitted into hospital, or has escaped being drawn as a conscript and is subsequently paid a surprise visit. In certain cases it has been found successful to place a compressive or collodion bandage over the eye, or to tie on a pair of sleeves ending in gloves without divisions for the fingers, or even to apply a strait waistcoat. HENRY POWER.

The Principles of Refraction in the Human Eye based on the Laws of Conjugate Foci. By SWAN M. BURNETT, M.D., Ph.D. Illustrated with twenty-five original diagrams, by CHARLES F. PRENTICE, M.E., 8vo., pp. 67. Published by "THE KEYSTONE," Philadelphia, U.S.A., 1904.

This elementary treatise on the refractive function of the eye, the author tells us, is an elaboration, with much added matter, of an article written by him, and published in the *American Journal of Ophthalmology* in 1903. He says, since all the phenomena pertaining to the object and its image formed by the refracting system of the eye, rest upon, and are only to be explained by, the laws of conjugate foci, it would seem that if we could first make our students thoroughly familiar with these simple primary laws by diagrams and models, together with the elementary equations evolved, it would much facilitate their comprehension of all the practical problems which arise in the study of the eye as an optical instrument. The conjugate focus is, he states, of course, mentioned often in our treatises and text-books dealing with the optics of ophthalmology, but always in a subsidiary way and incidentally, and not as the bed-rock upon which the whole fabric of refraction, as it pertains to the formation of images, rests. From a long experience in the teaching of medical students, it has been borne upon the author, that if we are able to seize and to impress upon them some central fundamental law back to which all the phenomena involved can and must be referred for substantiation, we shall have rendered their understanding much more logical and, therefore, easier. Such a fundamental law in refraction he considers the conjugate foci to be. Applied in this way he has found these laws to be of the greatest assistance in solving all the problems involved in the determination of the optical properties of the eye; he also believes that they have a special value in unravelling the intricacies inherent in the complex optical system that lies at the basis of that method of examination known as "skiascopy"; he further states that the confusion regarding the optical theory of that method, which prevails, is due to the neglect of a proper application

of these laws to the requirements of this special case. He says, however, that an application of these primary principles to all of the details of individual conditions cannot, of course, be attempted in an elementary treatise such as his claims to be. In this spirit the book is presented to us, and thus necessarily becomes a useful adjuvant in our studies of the dioptric system of the eye. C.A.O.

Essentials of Diseases of the Eye. By A. B. NORTON, M.D., New York City, New York, U.S.A., small 8vo., pp. 349. BOERICKE & TAFEL, Philadelphia, 1904.

In this little manual the aim of the author has been to simplify the study of eye diseases that the student and general practitioner may gain in a brief period of time a practical knowledge of, at least, the more common affections of the eye. Careful study of the work shows that Norton has accomplished his task exceedingly well. As a result of nearly twenty-five years' experience in which the author has seen many an eye lost that should have been saved by correct treatment at the beginning, he makes the following statement: "That observation has demonstrated that the general practitioner as well as the student look upon the eye as an exclusive specialty to be avoided rather than investigated"; how true this assertion! The result of this attitude, he correctly believes, has been detrimental to the best interests of the physician, and too frequently calamitous to the patient. With him, we hope that his book will contribute to a greater general interest and a better common understanding of diseases of the eye.

C.A.O.

Hand-book of the Anatomy and Diseases of the Eye and Ear for Students and Practitioners. By D. B. ST. JOHN ROOSA, M.D., LL.D., and A. EDWARD DAVIS, A.M., M.D., New York City, New York. F. A. DAVIS COMPANY, Philadelphia, Penna., 1904. 8vo., pp. xiv., 297.

This book is essentially intended as an auxiliary counsellor and guide to both the undergraduate and postgraduate student during their personal contact with actual cases in ophthalmic and aural clinics; to a less degree it has been arranged as a reference-work for the busy practitioner. The subject-matter has been limited to that which is definitely known and useful and deemed worthy of continued trial. The rendering is succinct and to the point, and the views are decided and certain, while the broad extent of its information is evidenced by the degree of its expressed research. The work can be endorsed as a valuable adjunct to the practical study of diseases of the eye and ear. C.A.O.

The Practical Medicine Series of Year Books: Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of GUSTAVUS P. HEAD. Vol. III.: The Eye, Ear, Nose and Throat. Edited by CASEY A. WOOD, C.M., M.D., D.C.L., ALBERT H. ANDREWS, M.D., and GUSTAVUS P. HEAD, M.D. December, 1903. Chicago: THE YEAR BOOK PUBLISHERS, 8vo., pp. 332.

In this age of rapid progress in the broad fields of medical research, much of the good that is being done can be alone known to those whose lives are more or less given up to special literary study. Written in many languages that are too often understood but by a favoured few, and then, through want of time, in a more desultory way, it becomes necessary for organised corps of specialised workers to gather together all that is important into abstract form for general publication; in fact, in no other way could the great masses of contemporaneous literature upon single medical subjects be brought into logical and useful composites. The work named in this notice has been an attempt to compile in its particular branches all that which has been considered the most valuable to those who have not the opportunity to consult either the, at times, almost inaccessible originals or their widely scattered abstracts. That the work shows wise selection and careful handling can be determined by study of its contents. With that part of the volume—the eye—which has been undertaken by Dr. Wood, the reviewer has made himself fully cognisant. As a result, he can emphatically state that this portion is worthy of recommendation to those who are interested in obtaining a comprehensive view of modern ophthalmology.

C.A.O.

NOTES AND ECHOES.

ON the 24th December, 1904, the editor of that useful periodical, the *Centralblatt für praktische Augenheilkunde*, celebrated the twenty-fifth anniversary of his professorship. Many letters of congratulation and numerous good wishes reached Professor Hirschberg. The Berlin Ophthalmological Society presented an address, together with one of those peculiarly Teutonic productions, namely, a so-called *Festschrift*. Dr. Gallemaerts has been appointed Professor of Ophthalmology in the University of

Brussels. Professor Guiseppe Cirincione, editor of *La Clinica Oculistica*, was nominated on January 12th, 1905, to the chair of ophthalmology in the University of Palermo, his native city. Mr. Wilfrid Allport has been appointed to the vacancy caused by the resignation of Mr. Priestley Smith as ophthalmic surgeon to Queen's Hospital, Birmingham.

* * * *

The Ophthalmological Society.

THE question mooted in the columns of THE OPHTHALMOSCOPE in November last, as to the advisability of the Ophthalmological Society devoting an occasional meeting to the provinces, was formally brought up by Mr. Secker Walker at a recent council meeting. The proposal appeared, on the whole, to meet with the approval of the members. It was felt, however, that before taking definite action, it would be advisable to obtain more precisely the feeling of provincial members with regard to the suggestion. Mr. Secker Walker accordingly invites expressions of opinion from provincial members upon the matter. We are asked to announce that letters may be addressed to him at 45, Park Square, Leeds. It is to be hoped that members will not allow this opportunity of escape of initiating extra-metropolitan meetings of the Society. There is obviously much to be said for the proposal, and little or nothing against it. Several London societies have adopted the plan with signal success. Amongst these may be mentioned the Anatomical Society, the Society for the Study of Disease in Children, the British Gynæcological Society, and the British Orthopædic Society.

* * * *

The British Optical Association.

WE have been asked why a body such as the British Optical Association is permitted to hold its examinations and meetings at the Mount Vernon Hospital for Consumption. To this we can only echo, "Why, indeed?" That a self-respecting hospital should allow itself to be in any way associated with the body in question, whose chief business is to grant pinch-beck diplomas of a semi-medical tint, is to us simply amazing. What are the facts of the case? These certificates of proficiency in sight-testing are granted to medically unqualified persons. The latest proceeding of the Optical Association has been

to promote a Bill in Parliament as some sort of counterblast to the proposed Medical Acts Amendments Bill of the General Medical Council. Clauses Nos. 23 and 31 of the last-named measure make it a penal offence for other than registered medical practitioners to apply "any real art, science, or system, relating to the prevention, cure, or alleviation of disease." In an official letter distributed to the members of the B. O. A., opinions are invited upon the draft Bill and subscriptions to a guarantee fund are solicited. The following naive sentence occurs in this precious communication:—"It" (*i.e.*, the Bill) "is perfectly unselfish, no one, however incompetent or small his trade, can in its inception be excluded." This lets the cat out of the bag with a vengeance! The memory of this confession we shall endeavour to keep green as long as the British Optical Association cumbers the earth.

* * * *

**The relation
of eye-strain to
nervous disorders.**

THE relation of eye-strain to nervous disorders in various parts of the body was first noted by that observant physician, Dr. Weir Mitchell. Nowadays it would be hard to mention any defect of the nervous system, functional or organic, central or peripheral, that has not at one time or another been attributed wholly or partially to errors of refraction or to "weakness" of the external ocular muscles. The thing has been overdone, so that "eye-strain" has become a thing accursed to the orthodox. The latest contribution is enough to strengthen and to deepen this cry of anathema: a bold and ingenious writer has actually attributed alcoholism itself to the influence of fatigued ocular muscles. The only possible grain of truth in this intellectual flight would perhaps lie in the fact that eye-strain is so common on the other side of the Atlantic that the majority of alcoholics might very well suffer from its effects. This race-tendency to a special organic defect is generally admitted, and would form an excellent subject for collective scientific investigation. Dr. Dana, of New York, speaks of the much-abused "eye-strain," and points out that the eye is the only organ credited with giving rise to far-reaching nerve disorders. We do not speak of "tongue-strain," nor of "stomach-strain," nor of "kidney-strain." Truth to say, eye-strain is the offspring of the general physician rather than of the ophthalmologist.

APROPOS the February issue of *THE Ophthalmoscope*, the following flattering notice appeared in a recent issue of the *Medical Press and Circular* :—

“THE ELECTRO-MAGNET IN EYE WORK.”

“Our contemporary, *THE OPHTHALMOSCOPE*, bids fair to “touch high-water mark in the annals of special medical “journalism. It announces that its next issue will contain “three important original communications upon the electro- “magnet in ophthalmic surgery by three of the greatest expo- “nents of that invaluable means of removing splinters of metal “from the eye-ball, namely, Professors Hirschberg, Haab, and “Snell. Professor Haab’s article will be of particular interest, “since he describes how the ‘giant magnet’ should be employed. “There are reasons for believing that some of the failures with “this instrument are to be ascribed to ignorance of how to use “it. Both Professors Hirschberg and Snell favour the employ- “ment of small instruments, the so-called hand magnets, worked “either from the street main, when that source of energy is “available, or otherwise from batteries or accumulators. That a “young journal like *THE OPHTHALMOSCOPE* should be able to “arrange a symposium of this sort shows that its management “is marked by well-directed purpose and energy. Speaking “generally, we should imagine that enterprise of this quality may “still find hidden treasures in the field of medical journalism.”

* * * *

[The next number of *THE OPHTHALMOSCOPE* will contain, *inter alia*, three interesting original communications upon renal retinitis by Dr. George Carpenter (London), Dr. Edmund Hobhouse (Brighton), and Dr. Arthur J. Ballantyne (Glasgow), respectively.]

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A MONTHLY REVIEW OF CURRENT OPHTHALMOLOGY.

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ORIGINAL COMMUNICATIONS.

ALBUMINURIC RETINITIS IN A CASE OF PARENCHYMATOUS NEPHRITIS IN A CHILD.*

BY

GEORGE CARPENTER, M.D.LOND.

EDITOR OF *The British Journal of Children's Diseases, etc.*

IN a paper on "Eye Changes in Relation to Renal Disease," read at the Meeting of the British Medical Association at Swansea in July, 1903, Mr. Nettleship called attention to the fact that "we are in need of more information as to cases of juvenile retinitis." In the discussion which followed this paper, in which he said that he had seen ten cases in patients under the age of 21 and had found fourteen others published in sufficient detail, I alluded to some observations of my own on this subject occurring in children.

*A paper read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association at Oxford, July, 1904.

I have seen and read of cases of neuro-retinitis arising in chronic interstitial nephritis in children, and there is no reason to suppose that the complication occurs more or less frequently in children than in adults suffering from this variety of renal disease. Chronic interstitial nephritis in children is a rare affection, but by no means so rare as is commonly supposed.

I am not aware that neuro-retinitis has been recorded as arising in association with "large white" kidney in children, although the fact that such is not mentioned in literature is due rather, I take it, to want of observation than to absence of fundus changes in the young in this condition.

At the Swansea meeting I incidentally alluded to the case which I now propose to give in some detail and to place on record the fact that in the child renal retinitis may complicate parenchymatous nephritis as distinguished from interstitial nephritis.

Annie D——, aged 10 years, came under my observation on 23rd November, 1885. An aunt had died of kidney disease; apart from this, the family history was unimportant.

Her illness commenced in June, 1884, with sickness, headache, and severe pains in the "stomach." Pain followed the sickness, and she had as many as five attacks in a fortnight. These attacks continued on and off up to the time of her first coming under observation. Blood appeared in her urine on the 7th November, 1885, and since then had been noticed in varying quantities.

On admission, she was a well-nourished child of sallow complexion. Her pulse was small, hard, and 96 to the minute. The cardiac impulse, which was heaving and diffuse, was $1\frac{1}{4}$ inches external to the nipple line. The urine was of specific gravity 1015, slightly acid, and full of blood. It also contained pus cells and granular and hyaline casts. Some five days later it was apparently free from blood, of specific gravity 1012, and contained one-eighth of albumin. She passed about a pint in the twenty-four hours. It was discovered at this time that she had severe neuro-retinitis of both eyes. The left optic disc was swollen and enlarged (Fig. 1). The vessels were partially buried in exudation, they bent as they crossed the edge of the disc, and beyond it they were partially obscured by a whitish haze. Just below the optic disc was a small hæmorrhage. Radiating from the edge of the disc to the macula was an irregular-shaped area of paper-whiteness underlying the retinal vessels. It had a defined edge and somewhat striated appearance. At the macula, in addition, were a number of minute yellowish-white dots. Above the paper-white area were a large number of small yellowish-white, well-defined

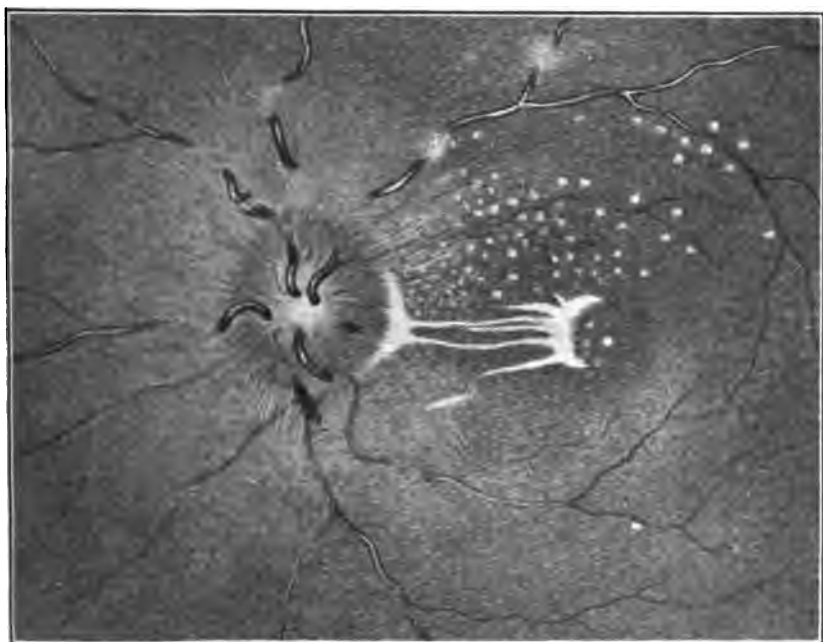


Fig. 1.

spots of varying size underlying the retinal vessels. The right optic disc (Fig 2), was in much the same condition as the left, showing vessels partially buried in exudation and small hæmorrhages. At the macula and between it and the margin of the optic disc, radiating fanwise towards it, were a number of paper-white patches underlying the retinal vessels. At the macula some were well-defined, others were not so. Between the macula and the disc the patches were well-defined and finally became merged in the haze of the disc. The vessels on the yellow-spot side presented along their course a number of patches of various shapes, small in size, below the retinal vessels, yellowish-white in colour and defined.

On the 30th November the urine was free from obvious blood—it contained hyaline and large and small granular casts. Two epithelial casts were seen, together with some free red-blood corpuscles and blood casts. Some of the renal cells were normal in appearance; others were undergoing fatty degeneration.

On the 1st and 3rd December there was one-third of albumin in the urine, a few hyaline and granular casts, and some scattered red-blood corpuscles. The specific gravity was 1014.

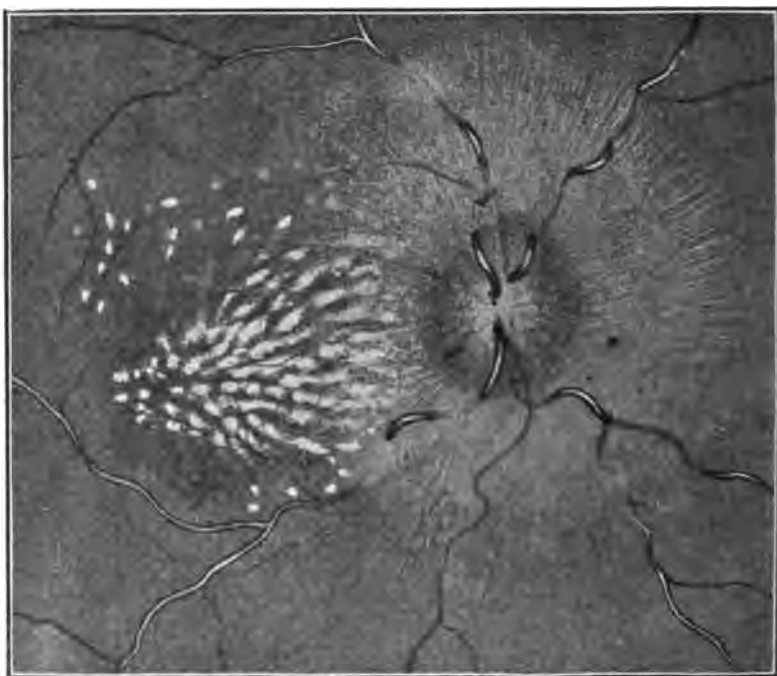


Fig. 2.

During the months of December, 1885, and January, 1886, she passed on an average about 2 pints of urine daily of specific gravity somewhere about 1014. Blood in quantity was a frequent occurrence, sometimes the colour of arterial blood, at others of a brick-red hue. The most albumin passed in an apparently blood-free specimen was one-half. On several occasions she complained of headache and feelings of nausea, and once or twice she was sick.

On the 17th February she complained of great pain in the umbilical region, which lasted for half an hour. After this attack blood clots of a bright red colour, varying in size from a silver penny to swan-shot were found in the urine. Abdominal pain occurred subsequently without blood clots in the urine during the month of April, and on the 8th of that month the urine was nearly solid with albumin. Some œdema was then noticed for the first time about the ankles. The parents suddenly determined to remove her from hospital. The fundus changes were more pronounced at this time.

She was removed and died soon afterwards, and a doctor who had attended her at her home, sent her kidneys for inspection. They were "large white" kidneys. The pelves were enlarged and thickened, as also the ureters.

RENAL RETINITIS IN A CHILD OF SIX-AND-A-HALF WITH INTERSTITIAL NEPHRITIS.*

BY

EDMUND HOBHOUSE, M.A., M.D. (OXON), F.R.C.P. (LOND.),

PHYSICIAN TO THE SUSSEX COUNTY HOSPITAL, BRIGHTON,

AND TO THE ALEXANDRA HOSPITAL FOR CHILDREN.

The chief points of interest in this case were briefly that the early symptoms suggested cerebral rather than renal mischief, the fits resembling those due to a pontine lesion; that the hæmorrhage seemed to be a relief to the kidneys, the flow of urine increasing during its continuance; and that the ocular symptoms were severe. In other respects the case resembles others of the same kind; the cause was probably scarlet fever; there was no evidence of congenital syphilis; nor was there anything to explain the rapid course of the disease. The only point in the family history was the presence of tuberculosis on both sides.

B. B. æt. 6½ years.—At 3 years of age she had sore throat, which mother believes was scarlet fever, followed by some swelling of feet and legs; otherwise was healthy until four months ago, although not strong. Then was sick in school, and has suffered since from headache and sickness occasionally. On November 23rd, 1904, at 3 a.m. she had convulsions, and was admitted to the Alexandra Hospital the same day.

On admission: a delicate, refined-looking child, thin but fairly well-developed, somewhat collapsed, dull and drowsy. Teeth carious, but not notched. Two hours later, she was very sick, and remained so for some hours, quite irrespective of food. She was quite conscious, but did not speak; no paralysis or rigidity; no headache; abdomen very retracted.

Progress and Treatment.—On November 25th, at 8.30 p.m., she was suddenly seized with convulsions. The spasms were limited to the right arm at first for about fifteen minutes; then, after ten minutes' remission, the right arm and left face began twitching, and, shortly after, the right leg. This lasted intermittently till 4 a.m., with somewhat stertorous breathing. Chloral and bromide were given by the rectum. Urine was 1030, alkaline, with a small amount of albumen, but no casts. On November 27th, the eyes were examined, and a suspicion of renal retinitis noted. On December 3rd the eyes were re-examined, and some soft, white patches seen in the fundus; no hæmorrhages. General condition about the same; quite conscious, but dull; no more vomiting. On December 20th blood was noticed in the urine, which was not smoky but port wine colour; no casts could be found. The

* A communication presented to the *Society for the Study of Disease in Children* on February 17th, 1905.

urine, which had been about 25 to 30 ozs., rose to between 40 and 50 ozs., and remained at that level till January 6th, when it gradually sank until death, on January 20th. The blood persisted until January 10th, and then disappeared. On January 8th vomiting began, which persisted until death. No casts could be discovered until the urine was centrifugalised, when a small number of hyaline casts were found, with a moderate number of erythrocytes and leucocytes. The renal retinitis on January 10th was of the most typical character. In both eyes there were numerous hæmorrhages, large white patches, and many small, glistening white dots, very extensive areas of both fundi being involved. The discs were moderately swollen. Owing to the child's mental drowsiness, it was not thought advisable to test the vision. The child became gradually exhausted, and died on January 20th of simple asthenia, just about two months from her admission, and the date when the renal retinitis was commencing. She had no return of convulsions nor coma.

Post-Mortem Examination.—There was practically no sign of disease in the body except in the kidneys, of which the left was exceedingly small, weighing about $\frac{1}{2}$ oz., the right weighed $2\frac{1}{4}$ oz., and was a good deal puckered. Dr. Bushnell, Pathologist to the Sussex County Hospital, who kindly examined them, reports that they are probably secondary to a "mottled" kidney, caused by a former acute or sub-acute nephritis. The brunt of the lesion has fallen upon the glomeruli, which are the seat of proliferation of epithelium, of capsulitis, and a hyaline change. The arterioles are thickened. There are no gummata. No cerebral lesions. The naked eye and histologic characters favour a secondary rather than a primary interstitial nephritis.

THE NEURITIC FORM OF ALBUMINURIC RETINITIS.

BY

ARTHUR J. BALLANTYNE, M.D.,

ASSISTANT SURGEON, GLASGOW EYE INFIRMARY.

Optic neuritis does not often occur as the only ophthalmoscopic change in Bright's disease, and most text-books of general medicine and ophthalmology make no mention of it; but it deserves, nevertheless, to be borne in mind, as the failure to recognise its true nature may easily lead to an error in diagnosis. Cases have been described by Heyman, Liebreich, Wecker, Schmidt, Magnus, Gowers, and others.

The typical ophthalmoscopic picture is one of prominent greyish-red swelling of the optic disc, not extending into the surrounding retina; fulness and tortuosity of the retinal

veins ; possibly one or two white spots on the swollen disc, but rarely any hæmorrhages or other gross lesions. The picture, in fact, closely resembles that of "choked disc," so often seen in cases of intracranial tumour.

Gowers and Groenouw emphasize the fact, that this condition occurs in cases presenting other symptoms suggestive of a brain lesion. Thus, one patient of Gowers (of granular kidney) complained of constant severe headache and occasional attacks of sickness ; another patient exhibited mental changes ; and a third had convulsions and coma. In the last case a diagnosis of cerebral tumour was made, but at the examination no brain lesion was present, and the patient was found to have suffered from granular kidneys. In one reported case *post-mortem* examination showed pachymeningitis hæmorrhagica, while in another, reported by Uhthoff, no brain lesion could be found.

These cases emphasize the importance, in cases with optic neuritis and cerebral symptoms, of ascertaining the condition of the urine, before making a diagnosis of cerebral tumour.

Gowers is of the opinion, that in all the cases which he has seen, there were slight retinal changes which would have been sufficient to distinguish the cases from those of cerebral neuritis, but these slight changes might be overlooked, on account of the prominence of the nerve changes. In the case reported below, the only such change was a hæmorrhage near the disc in one eye.

It is important to note that the condition seems to warrant a specially bad prognosis, as it is soon followed by a fatal result.

The following case presented no difficulty in diagnosis, but is interesting as showing the affection in a fairly typical form.

Mrs. M., æt. 55 years, admitted to Glasgow Royal Infirmary, under the care of Dr. J. W. Allan, 16th August, 1903, with swelling of legs, breathlessness, and general weakness, the earliest symptoms dating from three months only. She was going about her household duties in a sort of way, until the time of admission. For several weeks the urine had been scanty and high-coloured, and micturition frequent. Not much headache, and no defect of sight, complained of. Good health until onset of present illness. Married, and had had 15 children. Lips on admission somewhat livid. Respiration hurried and shallow. Pulse rather rapid, irregular, small, and soft. Temperature normal. General anasarca. Heart perhaps a little enlarged, with some accentuation of second sound at base. Edema of bases of both lungs, and pleural effusion on right side, forty ounces of fluid being withdrawn by aspirator. Uniform enlargement of liver. Spleen not

palpable. Some ascites. Urine, acid, specific gravity 1025, with a considerable quantity of albumen, but no blood: abundant tube casts, chiefly hyaline and finely granular.

Eyes.—Marked strabismus convergens said to date from measles in childhood. *Ophthalmoscopic Examination.*—In both eyes choked disc, tortuous vessels. A whitish patch bordered with pigment showing through lay a little beyond the temporal edge of the swollen disc. Retina normal. In left eye there was a flame-shaped hæmorrhage near the lower-outer margin of the disc. V.R. and I.—I. I. with glasses. At a subsequent examination swelling of disc showed slight diminution, and atrophic crescent coming more distinctly into view at temporal side of each disc.

Progress.—Southey's tubes were used for the limbs, and three days later paracentesis thoracis repeated. During some days patient was restless and mildly delirious. Urine for some days scanty in spite of treatment. Albumen (at first 0.4 per cent.) showed slight diminution. Anasarca increased, and condition became, on the whole, worse. On 31st July, 1903, after addition of diuretin to other treatment, there was great increase in quantity of urine, fall of its specific gravity, and corresponding decrease in percentage of albumen. General condition appeared to improve with lessening of anasarca, breathlessness, etc. On 3rd August, 1903, patient after a sudden attack of dizziness and vomiting, with a few twitchings about the mouth, became unconscious, and died three minutes after onset of symptoms.

Post-mortem Examination.—Fluid in both pleural sacs and recent pleuritic adhesions in right. Passive congestion and œdema of bases of lungs. Hypertrophy of left ventricle of heart. Atheroma of aorta and coronary arteries. No pericardial fluid. Passive congestion of spleen and liver. Right kidney smaller than left. Both kidneys showed slight granularity of surface and adhesion of capsule. Cortex not greatly diminished, and kidneys, as a whole, not much shrunken. Some dulness of the meninges. Atheroma of cerebral vessels. No excess of fluid in ventricles. Brain otherwise apparently normal. Eyes showed a fusiform swelling of optic nerves behind the globe, and swelling of optic papillæ. In left eye the hæmorrhage near the disc and a patch of old choroidal atrophy outside the macula, could easily be seen by the naked eye.

Microscopic Examination of Kidneys.—Kidneys showed two distinct sets of changes. At some spots changes were present indicative of an acute nephritis (cloudy swelling and fatty degeneration of epithelium of tubules, areas of intense round-celled infiltration, hyperæmia of the vessels of pyramids), in

other regions there were indications of a long-standing interstitial nephritis (strands of new-formed connective tissue, containing here and there clumps of atrophied glomeruli and tubules, inequality of diameter of tubules, and thickening of the intima of vessels of cortex), while in other parts, the kidney structures, tubules, and glomeruli, presented practically normal conditions. The case may therefore be looked upon as one of advancing interstitial nephritis in a moderately early stage, interrupted and terminated by supervention of an acute attack.

— *Microscopic Examination of the Eyes.*—The posterior part of each eye presented the characters usually found in highly myopic eyes, *viz.*, oblique entrance of the optic nerve, supertraction of the choroid and retina at the nasal side of the disc, retraction of the choroid and retina from the temporal side of the disc, and an area of thinning and atrophy of the choroid at the temporal side, corresponding to the white crescent seen ophthalmoscopically. A short distance behind the lamina cribrosa the optic nerve was distended, partly by œdema, partly by a moderate round-celled infiltration of the connective tissue septa of the nerve. In its passage through the scleral aperture the nerve appeared constricted, and again broadened out in front of the lamina cribrosa, showing a considerable projection of the papilla, from œdema of the nerve fibres without cellular infiltration. This swelling of the nerve fibre layer ceased rather abruptly a short distance from the scleral aperture on each side, and the retina elsewhere presented no abnormalities. Thickening of the walls of arteries, both in choroid and in retina, and dropsical distension of the optic nerve sheath behind the globe were also present.

Remarks.—Cases like the above raise the interesting question, “Is the condition of the optic nerve of the nature of the choked disc found in cases of intracranial tumour, and other causes of raised intracranial pressure, or is it of the nature of an actual neuritis, assuming these two conditions to be different in their nature and origin?” Some authors refer to it as a neuritis, others as a papillitis, others as œdema of the papilla, and others as choked disc or “stauungspapille.” One or two points in this case may be mentioned, which seem to support the view, that the condition is primarily an œdema of the papilla and nerve and not an inflammation:—(1) The preponderance of the œdematous distension, and the comparative insignificance of the cellular infiltration of the papilla and trunk of the nerve. (2) The manner in which the swelling is seen, both ophthalmoscopically and microscopically, to be limited to the actual nerve-head. (3) The retention of good vision. (4) The apparent tendency of the swelling of the disc

to diminish when free diuresis was established, relieving the mental symptoms, and presumably causing diminution of intracranial pressure. It is to be noted that cases presenting this ophthalmoscopic picture, have usually shown an exaggeration of mental or cerebral symptoms, thus exhibiting a group of symptoms suggestive of intracranial tumour. One is tempted to think that the œdema of the nerve may have its origin in a rise of intracranial pressure, due perhaps to excess of fluid in the lateral ventricles of the brain. In the case reported above, such improvement as resulted from the onset of diuresis might be attributed entirely to relief of such excess pressure. It certainly was due to no improvement in the general health of the patient, who died, it will be remembered, three days later with no new development of pressure signs.

Speaking of the class of cases in which the neuritic form of albuminuric retinitis occurs, Gowers states that it practically always occurs in cases of advanced chronic kidney disease, commonly of contracted kidney, but he mentions its occurrence in a case of large pale kidney with commencing induration. The above case was, so far as can be judged, one of chronic interstitial nephritis in a not very advanced stage, complicated by the supervention of an acute process. From a study of the foregoing in relation to other recorded cases, the following conclusions may be drawn:—

(1) The neuritic form of albuminuric retinitis is of rare occurrence.

(2) It is found usually in cases presenting severe cerebral symptoms, and may thus lead to suspicion of cerebral tumour. Renal disease must therefore be excluded, before resorting to a diagnosis of cerebral tumour in such cases.

(3) It is probable that in most cases other slight retinal changes are to be found at some time or other, which would point to the renal origin of the condition.

(4) It occurs mainly in cases of advanced chronic interstitial nephritis, but may also accompany other, apparently less advanced, forms of renal disease.

(5) The condition of the nerve is probably of the same nature as the choked disc of intracranial disease, and like it is to be attributed to increase of intracranial pressure.

(6) Its occurrence suggests a grave prognosis, and is usually soon followed by a fatal result.

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CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

NOTE ON ATROPIN IRRITATION.

BY

WILLIAM GEORGE SYM, M.D.,EDITOR OF THE *Ophthalmic Review*; ASSISTANT OPHTHALMIC SURGEON TO THE
ROYAL INFIRMARY, EDINBURGH.

One is caused much trouble in the treatment of those conditions of the eye for which atropin is required, in those cases, fortunately not very numerous, in which solutions of atropin set up acute inflammation of skin and conjunctiva. I am aware that some do not agree with me, but, so far as my own experience goes, I am quite satisfied that this is a real idiosyncrasy, and that the actual cause of the dermatitis is not a septic state of the solution; nor have I myself found any benefit from changing the mydriatic. In a recent case, that of a lady who was suffering from irido-cyclitis with tendency to synechiæ and with deposits on Descemet's membrane, and in whom therefore atropin was urgently required, this form of irritation came on and the mydriatic had to be stopped. When a relapse occurred, atropin in ordinary solution again caused conjunctivitis. I resolved, however, to try whether the alkaloid itself in oily solution could be safely used, and was glad indeed to find that this was so. The patient was able to employ atropin in this form twice a day for several weeks without any annoyance whatever. The solvent was pure olive oil which was boiled, and as it cooled the alkaloid was added. This mode of using atropin is well-spoken of by Scrinì (Paris), but I am not aware that he has experienced this particular benefit from its employment. In the actual inflammation ichthyol, I think, gives the best results. I shall be glad to know if any of the readers of THE OPHTHALMOSCOPE have had similar experiences. I shall certainly try it again.

**AN UNUSUALLY WELL-MARKED INSTANCE OF
OPAQUE NERVE-FIBRES.**

BY

SYDNEY STEPHENSON.

An instance of opaque nerve-fibres so extensive as that shown in the plate cannot be of common occurrence. The facts of the case are as follows:

Maud Z—, 8 years, came under my notice on April 28th,

12/80
1904. Her left eye was somewhat divergent and slightly more prominent than its fellow. The right eye showed 1.5D. of total hypermetropia. The left eye had 18 D. of myopia with 1.0 D. of astigmatism, axis almost horizontal. The left fundus showed the striking ophthalmoscopic picture depicted in the plate. The opaque nerve-fibres arose from all parts of the margin of the disc, except down and out, and extended into the fundus for a considerable distance, especially in an upward and outward direction. Several of the retinal vessels near the upper nasal quadrant of the disc were more or less concealed by the mass. The disc itself, as usual, was not invaded, and it showed a peculiar dark-reddish colour, as the result of contrast with the glistening white mass around it. The macular region was not involved. There were no outlying patches of opaque nerve-fibres. The limits of the field for white were practically normal, but although it was obvious that the blind spot was larger than usual, yet its exact limits could not be mapped out with the perimeter, owing to the excessive nervousness and timidity of the child, an alien immigrant.

UNUSUAL ARRANGEMENT OF OPAQUE NERVE-FIBRES*

BY

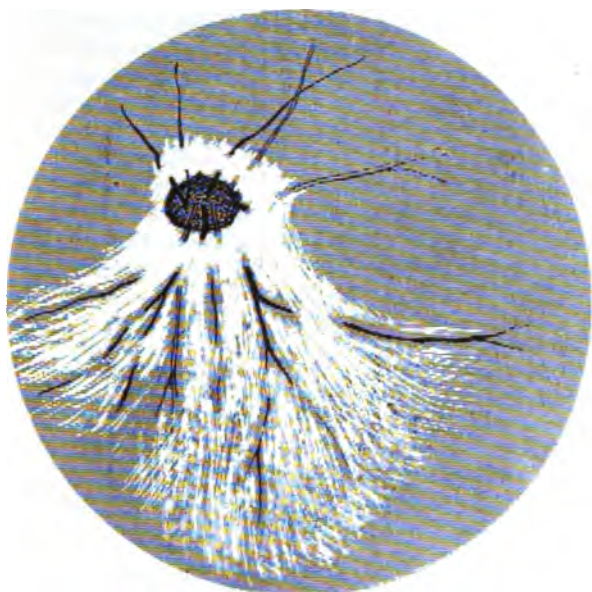
DR. A. ANTONELLI,
Of Paris, France.

The subject of this condition was a girl of 17 years, whose family history was good, and who showed no malformation except that to be described. Left eye was slightly myopic and markedly amblyopic, with—2.0 D. sph. V. = 0.1. The optic disc, as shown by the figure, was small, badly shaped, very dark, pigmented at its circumference, and—an exceptional thing—completely surrounded by opaque nerve-fibres. The glistening *plaque* was narrow along the temporal border of the papilla towards the macula, but became larger above and especially below, where it was prolonged as far as the equatorial region of the fundus, also a rare condition, following the chief vascular branches, the infero-nasal and the infero-temporal, of the retinal vessels. The vessels, visible upon the optic disc and for some little distance from the border of the latter, disappeared more or less completely here and there in the depths of the mass of opaque nerve-fibres. The visual field showed a negative scotoma, which enlarged Mariotte's blind spot by 15° or 20°.

*Patient exhibited on 7th February, 1905, at the *Société d'Ophthalmologie de Paris*.



TO ILLUSTRATE MR. SYDNEY STEPHENSON'S CASE OF OPAQUE NERVE-FIBRES.



Left Eye. (Inverted Image.)

The right eye was normal in every respect.

The publication of this brief note is justified by the rarity of such cases, which occur once in every 2,000 patients, according to the average of the figures furnished by different *cliniques*.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—PATHOLOGY.

(First Notice.)

- (1) Polignani, L.—The pathological examination of a large carcinoma of the face, which had begun in the lacrymal sac. (Reperto anatomico-patologico post mortem, in una inferma affetta da vasto carcinoma del sacco lagrimale e con diffusione alle parti prossime.) *Tocco, Edit., Naples, 1903.*
- (2) Lieto-Vollaro, A. de.—On the pathological anatomy of the arcus senilis. (Sull'anatomia patologica dell'arco senile.) *Annali di Ottalmologia*, Vol. 32 (1903), Fasc. 7-8, p. 478.

- (3) Stock, Wolfgang. — Experimental researches on the localisation of injurious matters of endogenous origin, especially those of a septic nature ; being also a contribution to the question of the endogenous origin of Iritis, choroiditis, and sympathetic ophthalmia. (Experimentelle Untersuchungen über Lokalisation endogener Schädlichkeiten, besonders infektiöser Natur im Auge, zugleich ein Beitrag zur Frage der Entstehung endogener Iritis und Choroiditis, sowie der sympathischen Ophthalmie.) *Klin. Monatsbl. für Augenh.*, 1903, Bd. I, pp. 81 & 228.
- (4) Santucci, S.—Contributions to the histology of congenital Cataract. (Contributo all'istologia delle cataratte congenite.) *Annali di Ottalmologia*, Vol. 32 (1903), Fasc. 9-10, p. 621.
- (5) De Lapersonne, F.—Spinal lymphocytosis and eye affections. (Lymphocytose rachidienne et affections oculaires.) *Recueil d'ophtalmologie*, XXV (1903), p. 316.
- (6) Selenskowsky, J., and Woizechowsky, M.—Experiments on endogenous infection of the Eye. *Archives of Ophthalmology*, September, 1903, and *Arch. f. Augenheilk.*, April, 1903.
- (7) Elschnig. — Epithelial covering of the anterior and posterior chambers as a cause of glaucoma after extraction of cataract. (Epithelauskleidung der Vorder- und Hinterkammer als Ursache von Glaukom nach Staroperation.) *Klin. Monatsbl. f. Augenheilkunde*, 1903, Bd. I, p. 247.
- (8) Rumschewitsch, K.—Upon cysts in the region of the Caruncle. (Ueber cystoide Gebilde im Gebiet der Caruncula.) *Klin. Monatsbl. f. Augenheilkunde*, 1903, Bd. II, p. 24.
- (9) Schiek, F.—On the connection of certain forms of Retrobulbar Neuritis with affections of the circulatory apparatus. (Ueber den Zusammenhang gewisser Formen der retrobulbaren Neuritis mit Erkrankungen des Gefäß-systems.) *Archiv f. Ophthalmologie*, Bd. 56, May, 1903.
- (10) Reis, W.—Some unusual Epithelial Tumours of the Eyeball. (Ueber einige seltenere Geschwülste des Augapfels epithelialer Natur.) *Klin. Monatsbl. f. Augenheilk.*, November 13, 1903.

- (11) Villard, H.—The anatomical examination of an eye affected with ulcer of the cornea and hypopyon. (*Examen anatomique d'un œil atteint d'ulcère de la cornée avec hypopyon.*) *Annales d'oculistique*, T. CXXIX (1903), p. 401, and *Recueil d'ophtalmologie*, T. XXV (1903), p. 467.
- (12) Blascheck, Albert. — Sympathetic ophthalmitis with hyperplastic inflammation of the sympathising eye, and central deafness. (*Sympathische Ophthalmie mit hyperplastischer Entzündung des sympathisierten Bulbus und centraler Taubheit.*) *Zeits. f. Augenheilkunde*, Vol. IX (1903), p. 434, and *Wochenschr. f. Ther. u. Hygiene des Auges*, November 12, 1903.

(2) The investigations of Lieto-Vollaro essentially confirm those of Takayasu in showing that : (1) the opacity of the arcus senilis is due to a more or less abundant infiltration of fatty granules into the stroma, interstitial spaces, and lacunæ of the periphery of the cornea ; (2) the fatty substance of gerontoxon presents a histochemical composition different from that of the fatty substance found in organs affected with adipose degeneration. Gerontoxon, in effect, does not yield the characteristic black re-action with osmic acid, and the substance of which it consists is probably allied to palmitine or stearine rather than to oleic acid. (3) In a certain number of cases one may find side by side with the arcus senilis, hyaline concretions, such as Fuchs has described. The fatty substance is arranged askew in the thickness of the cornea and in the anterior layers of that membrane ; it commences at a spot corresponding to the origin of Bowman's membrane, a fact that explains why a transparent strip is always present between the peripheral edge of the arcus and the commencement of the sclera.

A. ANTONELLI.

(3) The important question of the origin of sympathetic ophthalmia has up to the present time never been satisfactorily answered, in spite of the amount of work bestowed upon it, and the various hypotheses of migration (Deutschmann) and irritation of the ciliary nerves (Schmidt-Rimpler).

The researches of Panas (subcutaneous injection of bacteria and irritation of the eye by means of nicotine or acetic acid) and of Moll (injection of pyocyaneus cultures into the aural vein and simultaneous irritation of the corresponding eye by injecting nicotine or croton oil) are, according to Stock's results, open to objection. The same may be said of the toxin theory put forward by Bellarminoff and Selenkowski. Stock first experimented with diphtheritic toxin, staphylo-toxin, and filtrations from bacterium coli. He injected these,

either pure or diluted with bouillon, into the vitreous bodies of rabbits' eyes. Severe iridocyclitis with infiltration of the sheaths of the optic nerve on the same side resulted. In no case did inflammatory symptoms of any kind occur in the other eye. This throws some doubt on the results obtained by Gasparrini, Bellarminoff, and Selenkowski. In a second series of experiments Stock injected cultures of bacillus pyocyaneus into the aural veins of rabbits. He distinguishes three degrees of the resulting disease: (1) severe form, the animal dies in 12 to 24 hours; (2) semi-severe, the animal lives from 2 to 8 days; (3) mild form, the animal recovers or does not die before the 8th day. Further, he irritated one eye of the animal with injections of croton oil into the vitreous body, or by insertion of a piece of copper or silver into the anterior chamber. Of 32 animals, 16 were treated with the severer, 16 with the milder, form of irritation. Clinical observation showed the iris to be the spot where the bacteria tended to collect. In several cases emboli of bacilli were found in the ciliary body and in the choroid. The retina was unaffected; the sheath of the optic nerve, however, was infiltrated in more than half of the eyes microscopically examined. Finally, Stock injected pure cultures of tubercle bacilli into the aural vein of rabbits. In every case symptoms of tuberculous iritis and choroiditis appeared in both eyes. The choroidal centres of infection, which show in 13 to 15 days as light spots with reddish edges, may disappear in from 2 to 3 months, as also the nodules in the iris, which may be accompanied by keratitis parenchymatosa. In one case a severe conjunctival tuberculosis resulted, which was thus of endogenous origin.

Stock comes to the following conclusions:—

1. Metastatic affection of the eye (in rabbits) follows bacteriæmia (pyocyaneus B.) in a high percentage of cases, even where the eye itself has been subjected to no kind of irritation.

2. We are not in a position to form any conclusive judgment as to whether an irritant applied to one eye has any metastatic influence on the other.

3. The metastatic inflammation manifests itself as a nodular iritis, in rare cases as a choroiditis disseminata.

4. When a severe though aseptic irritant has been applied to one eye, anatomical examination of the other eye shows neither pathological secretion of albumin nor round cells in the anterior chamber.

A. BIRCH-HIRSCHFELD.

(4) *Apropos* a case of congenital cataract in a child of 11 years, operated upon at the Turin *clinique*, Santucci recalls the various theories of causation, and expresses his personal

adhesion to that of Schirmer. He then describes the clinical varieties and anatomical characters of congenital cataract, and gives the result of the histological investigation of his own case. Lastly, he formulates the following conclusions: (1) in most cases the formation of congenital cataract is not very precocious; (2) the primary changes usually consist in the appearance between the fibres of exceedingly small granules, visible only with the highest powers of the microscope; (3) these granules are the result of the coagulation of a liquid probably of an albuminous nature, a process followed by shrivelling of the lenticular fibres; (4) the formation of a vacuole represents a more advanced phase of lenticular alteration, resulting from the fusion of granules and the shrivelling of the fibres; (5) fusiform and concentric lacunæ between the fibres represent a still more advanced stage. The appearance of Morgagnian spheres, filled with granulous masses, is constant when lacunæ are present: (6) the appearance of crystals is the last phase of the pathological process. Crystals of cholesterine and of calcium oxalate, as in naphthaline cataract (Panas), or of acicular needles (Schirmer), are seldom met with; (7) alterations in the nucleus are not common in congenital cataract. From a clinical point of view, congenital cataracts are not always clearly differentiated, since mixed forms are frequent. From a histological standpoint, there are no anatomico-pathological changes peculiar to each form, as similar changes may be met with in the various kinds of congenital cataract. A. ANTONELLI.

(5) Lumbar puncture, with examination of the cerebro-spinal fluid, was performed by De Lapersonne in seventeen cases of eye or nervous disease, with eight positive and nine negative results. The cases included optic neuritis and syphilitic choroido-retinitis (6), iritis (4), post-neuritic atrophy (3), meningeal neuritis (1), cerebral tumour (1), ophthalmic migraine (1), and paralysis of the third pair of nerves (1). From a diagnostic point of view, in three patients affected with neuritis and recent choroido-retinitis, the result was positive. The disease had lasted three months, eight days, and one month respectively. When the lesion was regressive, the result was negative. In one patient, clearly syphilitic, suffering from slight unilateral neuritis with cloudy vitreous, lymphocytosis disappeared three months after energetic treatment. This observation indicates that lymphocytosis is transitory, and accompanies recent lesions only. In specific manifestations of the anterior segment of the eye, lymphocytosis is present; three punctures, practised on account of syphilitic iritis, yielded positive results in two

instances. Apart from syphilis, cyto-diagnosis was positive in a case of neuritis symptomatic of tuberculous meningitis, and negative in three cases of post-neuritic atrophy. De Lapersonne concludes that his results show the usefulness of examining the cerebro-spinal fluid in a certain proportion of recent lesions, both of the anterior and of the posterior segment of the eye, when there is any doubt as to the existence of antecedent syphilis. S. S.

(6) This long and important article deals lucidly with the subject of endogenous infection of the eye. The writers recapitulate what is known clinically and anatomically about the subject, and describe a series of experiments they have undertaken in the hope of elucidating many of the obscure points about the condition.

There is no general infection in which resultant diseases of the eye have not been found. The latter have been seen especially in puerperal infection, pyæmia, caries, umbilical phlebitis, erysipelas, acute exanthemata, diphtheria, typhoid, typhus, relapsing fever, influenza, acute and chronic rheumatism, tuberculosis, lues, lepra, malaria, epidemic meningitis, and Weil's disease. Bacterial disease of single organs, as pneumonia, bronchitis, pleurisy, endo- and pericarditis, otitis media, catarrh of the stomach and of the bladder, and gonorrhœa, may also cause endogenous diseases of the eye. The ocular infections may present any degree of severity. They may end in complete recovery or in total loss of sight. Almost all authors agree that the choroid and the retina form the usual starting point in the more serious forms of endogenous infection of the eye. The common mechanism (as pointed out by Virchow in the year 1856) is by blocking of the capillaries by septic emboli derived from some infective focus in another part of the body. Many kinds of bacteria have been found, the most frequent being streptococcus, staphylococcus pyogenes, and pneumococcus. The other micro-organisms include the *B. typhosus*, and the influenza bacillus. In cases where no bacteria have been demonstrated in the eye, it is possible that the local affection is due to toxins manufactured in other parts of the body. The authors summarise this part of the subject as under :—(1) The cause of the worst form of endogenous eye disease, metastatic ophthalmia, is the formation of bacterial emboli in the vessels of the eye, principally in those of the retina and choroid. (2) All organic changes in the vessel walls which facilitate the formation of capillary emboli are to be considered factors favourable to the commencement of an endogenous infection of the eye. (3) In some cases the bacteria which caused the

general infection have been found in the eye, an indubitable proof of the endogenous character of the disease. (4) It is evident that these methods of investigation can play only a limited part in the elucidation of the subject. They can very rarely, if ever, be applied to mild forms of disease, or even to some forms which are destructive to vision, and yet these occur much more frequently than metastatic ophthalmia.

Selenskowsky and **Woizechowsky** describe the experiments made by Weber (1864), Marchand (1884), Ewetsky (1897), Panas (1897), Moll (1898), and Selenskowsky (1899). The outcome of these experiments seems to be that when intravenous injections of pathogenic bacteria are made, bacteria can nearly always be found in the aqueous humour if the eye had been previously irritated, chemically, mechanically, or in other ways. In the contrary event, bacteria were found relatively seldom in the aqueous humour. The organisms caused no clinical symptoms, whence Moll concluded that they retained their vitality but not their pathogenic power.

Although it is impossible in this place to recount the numerous experiments made by the authors, yet the conclusions reached by them may be given *in extenso*. They are as follows:—

1. It is possible experimentally to induce the entrance into the vitreous of bacteria circulating in the blood.

2. This entrance of bacteria into the vitreous is not from the anterior chamber but from the blood vessels of the posterior portion of the eye.

3. Bacteria circulating in the blood enter the aqueous from the ciliary vessels, the vitreous from the retinal and choroidal vessels. The iris and the lymphatic spaces of the optic nerve apparently play no part in this respect, although the simultaneous diffusion of the microbes by continuity through the lymph space of the optic nerve to the eye is frequently possible.

4. In spite of the absence of inflammatory symptoms, phagocytosis, directed toward their destruction, is always present when bacteria have entered an eye.

5. Under certain favourable circumstances, a severe inflammation of the eye can be obtained endogenously by experiment.

6. With a mild or moderately severe general infection, bacteria enter the vitreous only when the eye has been injured shortly before; and injury to both the anterior and posterior portions of the eye forms the most favourable condition for the entrance of bacteria, an injury to the posterior portion of the eye alone the next most favourable, and in a far less degree an injury to the anterior portion.

7. With a severe general infection, bacteria circulating in the blood may frequently pass into the vitreous of normal, non-irritated eyes.

(7) **Elschnig's** case was that of a man, 56 years of age, upon whom extraction of cataract had been performed. The process of healing was complicated by the opening of the wound. Nine weeks after the extraction, an acute glaucoma supervened, which subsequently necessitated enucleation. The epithelium which lined both chambers had penetrated the anterior chamber from the corneo-scleral margin, and thence had proliferated.

A. BIRCH-HIRSCHFELD.

(8) The first case described by **Rumschewitsch** was a retention cyst formed by the modification of a sweat gland in the caruncle, with mucous degeneration of the cells. The patient suffered from chronic trachoma. The second case was one of hyaline degeneration of the conjunctiva. The caruncular cyst was similar to that of the first case. A. BIRCH-HIRSCHFELD.

(9) **Schick** maintains, against Birch-Hirschfeld's objections, the important part which affections of the vessels of the optic nerve play in the production of chronic retrobulbar neuritis, although he admits that occasionally the nervous termini of the retina may be the first to suffer under the toxic effect of alcohol and tobacco. The papillo-macular bundle of the nerve is the first and foremost affected, because its central position makes it most liable to the ill-effects of impaired circulation, while it must be borne in mind that the conditions of collateral circulation and consequently of recovery are much more favourable here than in the retina, where the vessels are practically terminals. There is no pathological difference between the retrobulbar neuritis of tobacco and alcohol and other chronic forms due to diabetes, exhaustion, or over-lactation, and in rare instances to syphilis, while lead-poisoning may affect either the nerve or the vessels. Some cases also occur in myocarditis. From this point of view it is interesting to remember that small hæmorrhages are not infrequently seen round the O. D. in ordinary forms of chronic retrobulbar neuritis, thus pointing to their vascular origin. They do not materially alter the course of the disease. In at least one case of great clinical importance Schick could watch a typical form of retrobulbar neuritis, which was afterwards complicated by thrombosis of the retinal vein, without greatly altering the subjective symptoms, including a small central scotoma. Schick thinks that in every case of retinal hæmorrhage the presence of a central scotoma should direct attention to the condition of the optic nerve.

R. GRUBER.

(10) *1st case.* Carcinoma of the cornea in a man of 59 years. The tumour covered the whole cornea, and consisted of several layers of laminated epithelium. Some of the cells shewed morbid changes, as horny degeneration, distention, distortion, and necrosis. The stroma took its origin from the perivascular connective tissue of the limbus, and from the superficial lamellæ of the cornea. The ocular conjunctiva was intact. **Reis** concludes from the histological examination that the tumour originated in the first place from the cornea and not from the limbus. *2nd case.* A peribulbar epithelioma (arising from carcinoma of the limbus) which, in a short time, almost completely enclosed the eyeball, without, however, perforating it. Special interest attaches to the *3rd case*, that of a metastatic adeno-carcinoma of the choroid, in which the progress of the disease was particularly characteristic. The patient was a man of 59 years. Simple detachment of the retina was followed in a few weeks by appearances of glaucoma. A short time afterwards he had a fit of apoplexy induced by metastasis to the brain from the tumour. Exophthalmos soon made its appearance, and death ensued. *Post-mortem* examination revealed an extensive carcinoma of the peritoneum; metastatic growths were found only in the brain and in the left eye. The construction of the tumour was that of an adeno-carcinoma with, in parts, pronounced degeneration of the cells.

A. BIRCH-HIRSCHFELD.

(11) **Villard** examined pathologically the eye of a man, aged about 59 years, who was affected with hypopyon-keratitis in the course of absolute glaucoma. The results were briefly as follows: the lower, non-progressive, lip of the ulcer was smooth and covered with flattened epithelium, while the subjacent layers of the cornea were free from inflammatory infiltration. The upper, progressive, lip, on the contrary, was slightly swollen and markedly infiltrated. The epithelium was either missing or where it remained, raised by masses of leucocytes. The oedematous portion was formed of small round cells and stratified tissue, the former derived from the fixed cells and the latter from the lamellæ of the cornea. Conspicuous masses of micro-organisms, having all the characters of pneumococci, lay between the altered lamellæ. They were found nowhere else, and were limited to the aggressive part of the corneal ulcer. The hypopyon consisted of a fibrinous reticulum, which contained many polynuclear leucocytes and a few pigmented cells. The last-named were doubtless derived from the pigmentary cells of the stroma of the iris. The hypopyon, which included no micro-organisms,

(12) The left eye of a lad, aged 12 years, was blinded by a copper percussion-cap. Enucleation was refused. Eight weeks later sympathetic ophthalmitis of the right eye declared itself, and the left eye was then enucleated. The right eye exhibited chemosis of the conjunctiva and marked injection. There was a loss of substance 2 mm. to 3 mm. from the medial edge of the cornea inwards and upwards, and the conjunctiva at that spot was contracted. The upper part of the sclera, near the cornea, was bulged forwards. The eyeball, which was hard and painful, squinted outwards and downwards. The cornea was dull and stippled. In the course of the next two months all the symptoms became worse, and the eye was then removed. The pathological examination of the "exciting" eye showed a plastic exudation, which had in part become organised. The sympathising eye manifested great thickening of the uveal tract, with slight or absent exudation. The granulation masses of the hyperplastic inflammation recalled the appearances of a sarcoma, which had at first filled the eyeball, and had then broken through at one spot. Soon after the removal of the "exciting" eye, when the inflammation of the sympathising eye was at its height, a difficulty of hearing came on. This was later associated with fever and delirium and transient hyperaesthesia of hearing, but it eventually led to complete deafness. Investigation showed that the deafness was due to a central cause. No other nerve was affected. In a second case, observed by Dr. Sachs, of Vienna, there appeared after bilateral cataract extraction, an irido-cyclitis of one eye, which in the course of about six weeks was followed by sympathetic inflammation of the other eye. When the irido-cyclitis was at its height there existed a hardness of hearing, bordering on deafness, which had developed in a few days. After persisting unchanged for about a fortnight, the deafness passed away in the course of four to five weeks. Aspirin had been given, but in such small doses (2 gr. a day) that the difficulty in hearing could scarcely be assigned to that agent. Moreover, the symptom did not improve after aspirin had been stopped, whereas it did after the removal of the painful sympathising eye. Since the nerves lying between the optic and the auditory have not been attacked in any of the observed cases, six in all, the author assumes that the neuritis and perineuritis continued along the two optic nerves and the tractus into the corpus geniculatum externum and involved the neighbouring corpus geniculatum internum.

II.—CONGENITAL WORD-BLINDNESS.*

- (1) **Lechner, C. S.**—Congenital word-blindness. (*Aangeboren Woord-blindheid.*) *Ned. Tijdschrift voor Geneeskunde*, No. 5, 1903.
- (2) **Stephenson, Sydney.**—Congenital word-blindness. *Lancet*, 17th September, 1904, and *Reports of the Society for the Study of Disease in Children*, Vol. IV (1904), p. 165.
- (3) **Bruner, William Evans.**—Congenital word-blindness. *Ophthalmology*, January, 1905.

(1) In **Lechner's** opinion, word-blindness is not so rare as the number of communications published would make one suppose; but probably it often occurs that no proper notice is taken of the child's complaint of experiencing difficulty in learning to read, and we may suppose that more cases of word-blindness would be published if more attention were paid to the existence of the defect. Lechner himself was able to make the diagnosis because shortly before the patient came under his care, his attention was drawn to the subject by the communications of Hinshelwood and of Nettleship. The present case was in a country boy of 13 years, healthy in all other respects, except that he suffered from "ophthalmia scrofulosa," for which he sought advice. On trying to take the boy's sight, Lechner was struck by the patient not knowing his letters, although he had been at school for five years. Except for slight inflammation, the eyes were normal; vision taken with Snellen's types was $\frac{5}{5}$, and refraction emmetropic. Mentally, he appeared to be perfectly normal, and, according to his parents, he was the cleverest and most ambitious of their children. His memory was excellent, for he knew the contents of his school books by heart, but only by having heard them repeatedly read at school, for, in print or written character the simplest word was quite unintelligible to him. He could copy it correctly, but did not understand his writing. His own name was in some way an exception, for he could write it down and afterwards read it with difficulty. It was remarkable that ciphers caused him less trouble than letters, since he could correctly name ciphers, and even small numbers, when he saw them written. All the persons and objects around him he could recognise quite correctly, and he was perfectly fit for anything but reading.

*An interesting question of priority has arisen with regard to the first reported case of congenital word-blindness, commonly attributed to Dr. W. Pringle Morgan (*British Medical Journal*, Novr. 7th, 1896). It appears that Dr. James Kerr had somewhat earlier alluded to the condition, as a reference to the Howard Prize Essay of the Royal Statistical Society of June, 1896, will show. The same author, moreover, published three cases in the *Lancet*, of May 19th, 1900, p. 1446. These cases have been generally overlooked until now. EDITORS.

Word-blindness is clinically a part of soul-blindness (*Seelen-Blindheit*). Whereas in the latter *all objects* are properly seen by the patient, yet they convey no meaning at all to him, his memory for optic impressions being destroyed. In word-blindness the same is the case for words and letters only. Soul-blindness is known to follow destruction of the occipital brain and parts of the angular gyrus. In word-blindness, therefore, we may assume a congenital defect in these regions, probably in the gyrus angularis and gyrus supramarginalis. Lechner could not find an explanation for the boy's different behaviour towards letters and ciphers, which was mentioned also in former publications. It is hard to say what the essential difference between the two should be. One could hardly imagine that there could actually exist two separate centres in the brain for letters and for ciphers.

It is very important that the condition should be recognised as soon as possible, to save the patient from being thought unwilling or stupid, and being treated accordingly by parents or by teachers. The ordinary school is not the place for these children, who should be carefully taught by a patient and persevering teacher. If proper care be taken of such a patient the results may be excellent. One of Nettleship's patients afterwards became a lawyer. But there are cases where a considerable degree of defect exists and these should be no longer tortured with reading, if proper teaching does not effect any improvement. They should be developed in other directions.

G. F. ROCHAT.

(2) **Stephenson** adds two new cases to the growing list of patients affected with congenital word-blindness (Hinshelwood). The first patient, an intelligent lad of 9 years, experienced unusual difficulty in learning to spell and to read, and figures, also, gave him much trouble. Sight was practically normal. 1.50 D. of hypermetropia. Fundi normal; fields of vision for white full. After six months' special tuition, considerable progress had been made with reading. The second patient, a boy aged 10 years, who suffered from "habit-spasm," had experienced great difficulty in learning to read letters or figures. There was a considerable amount of hypermetropic astigmatism, after the correction of which sight equalled one-half. The patient's auditory memory was exceptionally good, so that he could quickly get by rote anything he heard. Commenting upon the sixteen cases so far published of this curious developmental defect, Stephenson insists that the condition is far from uncommon, and he agrees with Hinshelwood and Lechner in thinking it to be due to a congenital defect in the visual memory centre for words and letters. Eighty-two per

cent. of the cases have been met with in males. The average age of the reported cases was thirteen years. Some of the patients have evidently been of a neuropathic disposition. The general intelligence has nearly always been good. The auditory memory was highly developed in most of the patients. Stephenson believes that under suitable methods of education, considerable improvement can be effected in children with congenital word-blindness. A bibliography is appended to the communication.

GEORGE CARPENTER.

(3) **Bruner** reports an instance of congenital word-blindness in a lad, aged 9 years, whose general development, mental as well as physical, had been somewhat slow. He had no particular trouble in learning the alphabet, but had made extremely slow progress in learning how to read. The difficulty in reading had been just as great with large as with small print. The boy experienced considerable difficulty with written arithmetic but none with mental arithmetic. He was endowed with an excellent memory. V. normal, not improved with any glass. Under separate tuition there was considerable improvement in reading in the course of about sixteen months. The author abstracts the cases of this curious congenital condition described by Hinshelwood, Nettleship, and Wernicke.

III.—TABES-BLINDNESS.

Léri, André. — *Tabes-blindness.* (Le "Tabes - Cécité.") *Gazette des Hôpitaux*, 30 juillet, 1904.

Recent statistics for the most part place the proportion of optic atrophy in tabes dorsalis at from 10 % to 30 %. **Léri** himself, at Bicêtre, found 33 blind persons amongst 124 tabetics, a proportion of 26.5 %. Figures, however, present many fallacies, and so the author contents himself with the bald statement (the truth of which nobody can well dispute) that amaurosis is very frequent in tabes. Indeed, apart from tabes, optic atrophy is relatively a rare disease. For example, amongst 1,029 cases of atrophy **Galezowski** found tabes to exist in about two-thirds (717) of the patients. The onset of tabetic atrophy is marked by a triad of symptoms, namely, failure of sight, contraction of the visual field, and dyschromatopsia. With regard to the precise characters of the changes in the visual field, very different views are held, but all writers agree upon one point, *viz.*, that a central scotoma is seldom met with. Thus, **Grosz** found a central scotoma only once in a series of 101 cases. With respect to the colour phenomena, green usually disappears first, and is soon followed by red,

while the other colours go one after the other until nothing but blue remains. In hysteria, on the contrary, red may alone persist for a long period of time: Müller, of Gratz, insists that by the presence of dyschromatopsia amblyopia due to tabes may be distinguished from that due to insular sclerosis. Tabetic atrophy frequently begins in one eye, the other usually not becoming affected until a few months afterwards. It is usually stated that the progress of the amaurosis is slowly but steadily progressive, the entire process occupying several months to twenty years, the average being three years (Berger). Now and then a sudden attack of bilateral blindness, lasting a few hours or days, is observed. This transitory amaurosis is comparable with pre-ataxic paralysis of the ocular muscles. Léri, however, considers that tabetic amaurosis has two successive phases: first, a relatively acute stage, lasting at the longest two or three years; secondly, an essentially chronic stage, lasting, it may be, ten to thirty years. There exists, nevertheless, no sharp line of demarcation between the two periods. In the initial stages Léri has sometimes found with the ophthalmoscope an appearance of the optic disc recalling that of an antecedent neuritis. That some cases of tabes associated with blindness have an extremely long duration is an old and familiar observation. What influence, then, does blindness exert upon the ordinary symptoms of tabes? Léri believes that amaurosis has no influence upon the lesions in the posterior columns, since all the usual signs of tabes may develop when blindness has come on early, while when blindness supervenes late in the course of tabes, the spinal symptoms show no retrogression. On the other hand, Léri has found certain slight cephalic symptoms to be common in cases of tabetic blindness. These include changes in the pupils, transient oculo-motor paralysis, dulness of hearing, frontal, occipital, or orbital pains, and mental disturbances of varying intensity. The frequency of these symptoms leads the author to regard amaurotic tabes as almost as closely allied to general paralysis as to ordinary tabes dorsalis. He concludes that "general paralysis, tabes dorsalis, and tabetic amaurosis constitute three localisations of a morbid process of the central nervous system and of its membranes which may be associated or may remain more or less distinct from one another." After glancing at the various views held with regard to the anatomical changes in tabetic atrophy, Léri describes the results of his own pathological investigations. (a) *Retina*.—In all the eleven cases examined ganglion cells were found in the retina, although in four instances there existed no fibres in the optic nerve. The layer of nerve-fibres was invariably much attenuated, but the abundance of the

fibres remaining was proportionate neither to the number of fibres in the nerve nor to the number of multipolar cells. The number of elements was reduced in the other layers of retinal neurones. In short, the author has convinced himself that the changes in tabetic atrophy do not begin in the retina, as maintained by Popoff, Moxter, and Von Michel. (b) *Optic nerve*.—In almost every one of the twenty-four cases examined Léri found a marked thickening of the sheaths of the optic nerve, both as regards the orbital and the cranial portion of that structure. Microscopically, they were infiltrated with numerous round cells, lymphocytes. A pronounced disproportion was found to exist in the volume of nerves equally deprived of fibres—some retaining almost their normal volume, while others were reduced one-half or one-third. Léri's investigations lead him to believe that the primordial lesion is vascular obliteration, and he explains the atrophy of the nerve-fibres and of the interstitial tissue by consequent faulty nutrition. The nature of the vascular lesion is the same as that which characterises most tertiary syphilitic affections of a sclerotic kind, namely, peri- and endophlebitis and peri- and endarteritis obliterans. The orbital and the cranial portions of the nerve are equally affected by these changes, although they begin towards the peripheral portion of the nerve—that is to say, beneath the rich vascular plexus of the pia mater. In fact, we have to do with an interstitial neuritis primarily of vascular character and very probably of syphilitic origin, which evolves in two periods—the first of irritation, accompanied by vascular changes, and the second of sclerosis with progressive vascular obliteration and consecutive disappearance of the nerve-fibres. (c) *Chiasma*.—Similar but less pronounced changes are found in the chiasma. (d) *Optic tracts*.—The fibres of the tract disappear without interstitial changes or vascular sclerosis, or, in other words, they seem to undergo simple atrophy. (e) *Brain and Medulla*.—The main change found in the brain is a diffuse meningitis, altogether analogous to that of general paralysis. The medullary lesions also resemble those found in general paralysis.

To resume briefly the substance of an important communication it may be said that, in Léri's opinion, tabes blindness—i.e., amaurosis with a small number of spinal symptoms—represents in reality a localisation at the base of the brain of the same process as that which gives rise to general paralysis and to tabes dorsalis. It is bound up with several slight symptoms of cephalic origin. Tabes blindness, Léri thinks, is almost as nearly associated with general paralysis as with tabes dorsalis, and if the association has been overlooked, it is because the trivial mental symptoms of a beginning diffuse

polio-encephalitis are not so widely recognised as the symptoms of an early posterior spinal sclerosis. As to the nature of the optic lesion, that is of the character of an interstitial neuritis of vascular origin, brought about in the same way as most other forms of tertiary syphilitic sclerosis. The neuritis evolves in two stages, the acute and the chronic. The former, which lasts several months to three or more years, is marked by the rapid loss of all distinct vision, as well as by severe headaches, colour phenomena, *phosphènes*, and sometimes by hallucinations and mental disturbances. The second stage, that of sclerosis and gradual atrophy, lasts from three to twenty years or more, and is marked anatomically by obliteration of vessels, and disappearance of nerve-fibres; clinically, it is characterised by prolonged retention of perception of light. During this stage symptoms of irritation disappear, although mental troubles may persist even when paralytic lesions are well-developed. Owing to the variable evolution of the disease, great caution should be exercised before drawing conclusions as to the action of this or that remedy upon the progress of the malady. S. S.

IV.—RETINITIS, ALBUMINURIC AND GLYCOSURIC.

- (1) Suker, George F.—Decapsulation of the kidney, with reference to the concomitant intraocular complications in the common forms of nephritis. *Journal of the American Medical Association*, 27th February, 1904.
- (2) Jacobi, Leo.—Renal disease of pregnancy and retinitis albuminurica. *American Journal of the Medical Sciences*, April, 1904.
- (3) Nettleship, E.—Observations on the prognostic and diagnostic value of retinitis in diabetes. *Royal Lond. Ophth. Hosp. Reports*, Vol. XVI, Pt. I.
- (4) Nettleship, E.—On renal retinitis in young subjects, and on the relative frequency of juvenile interstitial nephritis in the two sexes. *Royal Lond. Ophth. Hosp. Reports*, Vol. XVI, Pt. I.
- (5) Rochon-Duvigneaud.—The question of arterial lesions in patients affected with albuminuric retinitis. (La question des lésions artérielles chez les malades atteints de rétinite albuminurique.) *Bull. et Mém. de la Société française d'Ophthalmologie*, 1904, p. 235.

- (6) **Eason, H. L.**—A case of albuminuric retinitis, three years after the acute attack, in which a detachment of the retina has spontaneously subsided in both eyes. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 147.

(1) The main object of **Suker's** paper is to discuss the influence of the operation upon the fundus changes and vision. In the list enumerated there were fifteen cases which could be utilized for this purpose: of these all except two died of nephritis within two years after the onset of the retinitis. Of the remaining two, the history of one is doubtful, while the other case is losing ground. The following conclusions are arrived at among others: the operation offers no hope in cases of bilateral nephritis with retinitis; the improvement in the fundus immediately after operation is temporary; and as yet the medical treatment of these cases yields results as good as, if not better than, the surgical. **FRANK W. MARLOW.**

(3) **Nettleship** has previously mentioned his belief that retinal changes in a person suffering from diabetes, do not point to the probability of early death with the same frequency as does retinitis of chronic Bright's disease. He here gives particulars of the duration of life and mode of death of forty-eight persons suffering from diabetic retinitis, or retinal hæmorrhages, who have been under his care. The age of these patients varied from 41 to 79 years. 60% of them lived for more than two years after the condition was seen, and only 1/5 % died within a year. This is very different from what Nettleship found in cases of renal retinitis (excluding that due to pregnancy) in which less than 1/3 lived for two years, and 2/3 died within a year. As to whether the retinal changes in diabetes are in reality due to an accompanying nephritis (which is frequently present), the author points out that from one-half to three-quarters of his cases died from diabetic coma, and therefore directly from the disease and not from nephritis, and the presumption is that the ocular mischief is caused by the principal malady. **C. D. M.**

(4) In this paper **Nettleship** discusses eighty cases of interstitial nephritis collected from various sources, occurring in people under 21 years of age. The dates of death of 62 are known and in 60 there was a *post mortem* examination; in the remainder the issue was not fatal or the date of death could not be ascertained. There were nearly twice as many females as males affected with chronic interstitial nephritis, although there were rather more males than females affected with parenchymatous nephritis. In adult life the preponderance of males over females in both varieties is very marked, although its explanation is not so easy. Congenital syphilis was proved

to be present in only 6 cases of **interstitial nephritis**, 3 of these being in infants; it was highly probable that it existed in several others, and it was certainly the cause of 4 of the parenchymatous cases. The conclusion is drawn that one or other of the specific fevers, including syphilis, is responsible for interstitial nephritis in at least 31 out of the 45 cases, whilst some other profound disturbance of health had occurred in several others. A large number of parenchymatous cases are likewise due to the same cause. C. D. M.

(5) The pathogeny of retinitis due to constitutional diseases, as leucæmia, pernicious anæmia, cancer, and, especially, nephritis, is as yet far from clear. Recent writers, almost without exception, attribute albuminuric retinitis to a degeneration of the retinal vessels. Arterial degeneration, according to this view, is the initial phenomenon, and all the other retinal lesions are dependent upon it. There is complete uncertainty with regard to the cause which determines the vascular alterations, and as to whether the last-named are or are not to be found in the optic nerve, the nervous centres, and the various organs of the body. **Rochon-Duvigneaud**, in conjunction with **Opin**, has investigated the condition of the arteries and of the organs in patients suffering from retinitis who succumbed to Bright's disease.* Briefly, as the result of five such autopsies, it was found that although the retinal and choroidal arteries manifested lesions, yet such were absent from the central artery in the optic nerve. Generalised arterio-sclerosis was not present. Indeed, all the organs were sound, except the retina, the heart, and the kidneys, and of these the first and last alone showed constant histological alterations. The cardiac changes were simply hypertrophic in nature.

The foregoing results have been confirmed by a recent autopsy. A man, aged 26 years, had suffered from scarlet fever at 13 years, from severe malaria at 17 years, and was known to be affected with retinitis for a month before his death from dyspnœa. Nephritis, cardiac hypertrophy, and retinitis were found at the *post-mortem* examination. The spleen and the liver were enlarged, the former to double its natural size, and the latter but slightly. The brain, medulla, and the arterial system showed no diseased changes. Microscopically, the arterioles of the brain and liver were sound. Some of the arterioles in the pancreas and spleen, however, showed changes. The renal arterioles were the seat of endo- and periarteritis, and others were obliterated. In other words, sound viscera had sound arterioles, while diseased viscera, on the contrary, showed diseased arterioles. In the retina two zones could be distinguished: first, a central zone

*For an abstract of this earlier communication see THE OPHTHALMOSCOPE Vol. II (1904), p. 320.—Editors.

around the optic disc and the macula in which the retina was thickened, white, infiltrated, and the site of discrete hæmorrhages ; secondly, a peripheral zone, the ophthalmoscopic appearances of which had remained normal. In the first zone some of the arteries were obliterated and others diseased, but most of them were permeable and little, if at all, altered. In the second zone the arteries were normal. The central artery in its course through the optic nerve was permeable. Rochon-Duvigneaud does not believe that the retinal lesions were due to endarteritis in this case, seeing that the central arteries and the vessels of the peripheral zone of the retina were normal.

The effect of this communication, broadly stated, is to cast considerable doubt upon the widely-held view that the lesions of albuminuric retinitis are due to arteritis, local or general.

S. S.

(6) **Eason** reports the following case.—A man, aged 29 years, suffered from acute tubal nephritis, with much œdema of the feet and legs, but no changes in the eyes. Retinitis supervened somewhat later, and was complicated with great œdema of the conjunctivæ. About two months later it was found that both retinæ were detached. When the patient was seen, some nineteen months subsequently, the detachment had disappeared. V. was 6/36, and the fields for white were practically normal. Numerous dark striæ were seen in the retina where the detachment had formerly existed.

V.—OPERATIVE TREATMENT OF STRABISMUS.

- (1) **Landolt, E.**—A new operation upon the ocular muscles : muscular lengthening. (*Une nouvelle opération sur les muscles oculaires : l'allongement musculaire.*) *Archives d'Ophthalmologie*, janvier, 1905.
- (2) **Landolt, E.**—The treatment of strabismus. *Lancet*, 28th January, 1905.
- (3) **Stephenson, Sydney.**—The treatment of strabismus. *Lancet*, 4th February, 1905.

(1 and 2) In inveterate cases of convergent strabismus, concomitant or paralytic, **Landolt** operates by lengthening the shortened muscle. Details of operation are as follows :—the muscle is exposed by means of a longitudinal incision through the conjunctiva, and the muscle (as shown in Fig. 1, A) is divided somewhat in the form of the steps of a stair. The extremities of the cut muscle are then united by sutures (*see* Fig. 1, B).

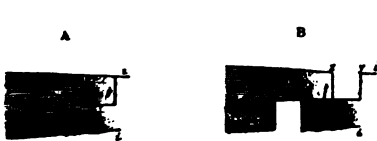


Fig. 1.

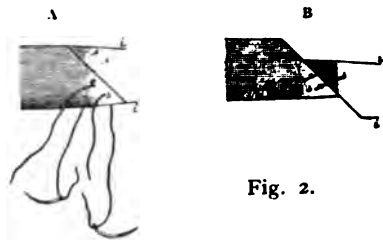
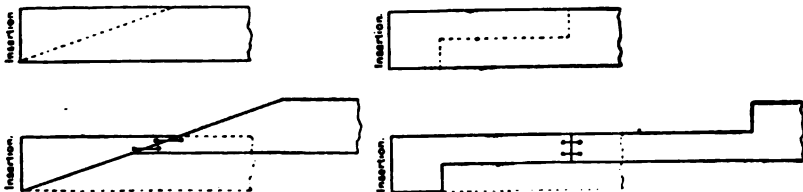


Fig. 2.

In a second method the muscle is divided into two parts by an oblique section (Fig. 2, A), and the cut ends are united by points of suture (*aa* and *bb* in Fig. 2, B.) To render these various incisions as easy as possible, the muscle should be stretched on the flat by means of a squint-hook, while an assistant turns the eye as far as possible in a direction opposite to the action of the muscle which is being lengthened. The sutures should be placed in the posterior—*i.e.*, distal—part of the muscle before the latter is divided, as otherwise the muscle may retract beyond the surgeon's reach. The results obtained by Landolt with this operation, which he characterises as easier to describe than to perform, have been of an encouraging nature.

(3) **Stephenson** points out that in July, 1902, he described the operation of lengthening the tendon of the internal rectus muscle for the cure of convergent strabismus in a paper read before the Ophthalmological Society of the United Kingdom, thus antedating Landolt by upwards of two years.* Upon the same



occasion Stephenson exhibited several patients upon whom he had performed the operation. Stephenson described two ways of lengthening the tendon without disturbing its insertion, the details of which will be obvious from the accompanying figures, taken from his original communication.

**Trans. Ophthalm. Society*, Vol. XXII (1902), p. 276.

VI.—TREATMENT.

(Second Notice.)

- (1) Phillips, William Linton.—A form of rational treatment for corneal ulcers. *New York Medical Journal*, October 3rd, 1903.
- (2) Weeks, John E.—Recent advancement in the therapeutics of the eye. *Medical News*, October 10th, 1903.
- (3) Roulliès, J.—On the treatment of certain traumatic ulcers of the Cornea with hypopyon by means of early iridectomy. (Du traitement de certaines ulcérations traumatiques de la Cornée avec hypopion par l'iridectomie précoce.) *La Clinique Ophtalmologique*, 10 novembre, 1903.
- (4) Fage.—Salts of silver to employ in the treatment of conjunctivitis. (Sels d'argent à employer dans le traitement des conjonctivites.) *Soc. mèd. d'Amiens*, 2 décembre, 1903; and *Rev. générale d'ophtalmologie*, 31 octobre, 1904.
- (5) Galezowski.—Scopolamine in the treatment of affections of the Eyes. (De la solution de Scopolamine dans le traitement des affections oculaires.) *Recueil d'ophtalmologie*, XXV (1903), p. 371.
- (6) Dinner.—Upon intraocular disinfection by iodoform, with especial reference to the introduction of iodoform into the vitreous body. (Ueber intraokulare iodoform-disinfektion mit spezieller Berücksichtigung der Einführung des Iodoforms in den Glaskörper.) *Zürich Thesis*, 1903, and *Rev. générale d'ophtalmologie*, 31 août, 1904.
- (7) Marshall, David T.—The treatment of some diseases of the eye by warm medicated sprays. *Medical News*, December 26, 1903.
- (8) Darier, A.—Dionine after four years' trial, a revulsive, antiseptic, eutrophic agent: antitoxines and phagocytosis; dressing of wounds and of corneal ulcers with dionine; its analgesic and mydriatic properties. Dionine even more serviceable than cocaine. (La Dionine après quatre années d'expérimentation, revulsif, antiseptique, eutrophique: antitoxines et phagocytose; pansement des plaies et des ulcères cornéens; propriétés analgésiants et midriatiques. La dionine rend autant et plus de services que la cocaine.) *La Clinique Ophtalmologique*, 25 janvier, 1904.

- (9) **Lindahl, C.**—The treatment of sympathetic ophthalmia by sodium salicylate. *Swedish Medical Society*, February 9th, 1904.
- (10) **Bosse.**—Optic atrophy improved by opotherapy and Poehl's spermine. (*Atrophia optici gebessert durch Organsaft und Spermin-Behandlung.*) *St. Petersburger Med. Woch.*; 14-27 February, 1904, and *Rev. générale d'ophtalmologie*, 31 octobre, 1904.
- (11) **Corner, Albert.**—Inflammation of the lacrymal passages. *British Medical Journal*, April 30th, 1904.

(1) **Phillips** says it is necessary first to contract the arteries in the conjunctiva and iris; by so doing we check the escape of albumin into the anterior chamber and stop vascularization of the cornea. This will lower tension and restore the nutrition to the cornea by liberating the lymph spaces, and it will also render the deeper structures less liable to infection; to accomplish this he uses suprarenal extract. The conjunctival sac is rendered antiseptic with some mild preventative, such as boric acid. To build up the lymph corpuscles and thus bring about resolution the author uses nuclein solution, 5 % (the hypodermic solution being less irritating). The suprarenal must be dropped into each eye 3 times a day, and as the severity of the disease increases, the medicine must be instilled oftener, up to 10 times a day, depending upon the absorption of the drug and its action on the heart. The eye should be kept clean with warm boric acid solution, and the nuclein solution should be combined with and given in the same way as the suprarenal. The conditions which have a bearing upon this disease must also be treated, for a great many times ulcers have their origin in other diseased parts, such as caries, adenoids, hypertrophy of the turbinates, &c.—*American Medicine*, October 17th, 1903.

(2) **J. E. Weeks** finds acoin advantageous in removing foreign bodies, as it does not dilate the pupils or interfere with accommodation. Dionin is valuable for rapid resorption of inflammatory products and for prolonged anesthesia in glaucoma, iritis, iridocyclitis, and keratitis. Holocain is of great value in surgery as an anæsthetic, as it has no effect on the vessels, pupils, or accommodation. Nargol is pleasanter to use and less sticky than protargol. A thickened condition of the conjunctiva sometimes follows the use of protargol, requiring the employment of other remedies. Argyrol is as good, if not better. It is one of the most efficient remedies for purulent conjunctivitis of all varieties, and for dacryocystitis. Good results have been reported from collar-

golum. Trikresol is reliable and unirritating as an antiseptic wash. Thiosinamin has been advocated in corneal opacities. Iodin vasogen is irritating but efficacious in corneal ulcers. The writer has obtained excellent results from mercuric chlorid injections, 1-1,000, in orbital cellulitis. He discusses hetol, iodoform, and serumtherapy.—*American Medicine*, October 17, 1903.

(3) This article by **Roulliès** (of Agen) deals especially with traumatic ulceration of the cornea having what may be called an agricultural origin, *i.e.*, wounds by ears of corn, branches of trees, earth, etc. In the writer's experience, such infections of the eye do not heal readily by means of ordinary remedies (including the actual cautery) but tend to go on to severe inflammation of the iris, ciliary body, and choroid, even when the corneal condition is recovering satisfactorily. Nine cases are given in detail in support of the above statement, and in them Roulliès practised early iridectomy with excellent results, *qua* the iridocyclitis. "Since iridectomy, when the cornea is frankly purulent and in the presence of hypopyon, does not provoke panophthalmitis, such intervention having indeed rapidly caused the disappearance of all the septic inflammatory phenomena of the cornea, iris, and deep membranes, the conclusion seems justifiable that in such cases this operation should be performed early. . . . It is possible to state freely that if a completely sedative effect is not produced within 24 hours by paracentesis or Sacmisch's operation, it is necessary to do an iridectomy if one wish to stop the progress of the infection and protect oneself from such formidable secondary complications." ERNEST THOMSON.

(4) Protargol and especially argyrol, says **Fage**, must take important place in ocular therapeutics. Without altogether abandoning silver nitrate, ophthalmic surgeons are becoming more and more inclined to hold that remedy in reserve for the most serious cases. E. R.

(5) The neutral sulphate of scopolamine, according to the following formula, is strongly recommended by **Galezowski** as a mydriatic: scopolamine sulphate, 0 gr. 15; distilled water, 15 gr. H. DE V.

(6) After a bibliographical introduction upon treatment by iodoform and its introduction into the eye, **Dinner** reports 25 cases drawn from Professor Haab's *clinique*:—(1) Penetrating and non-penetrating wounds of the eye by foreign bodies, 16 cases; introduction of iodoform into the anterior chamber, 12 times, and into the vitreous body, 4 times; (2) post-operative infections, 3 cases; (3) sero-plastic tuberculous iritis, 3 cases; and hypopyon-keratitis, 3 cases. From

the detailed study of these 25 cases it results that the introduction of *plaques* or *batônnets* of iodoform (Haab's method) is well borne even by the vitreous body, and that by these means several eyes have been saved, sometimes even with the retention of good sight. H. DOR.

(7) **Marshall** treats blepharitis, acute and chronic conjunctivitis, pannus, trachoma, corneal ulcers and infiltrations, interstitial keratitis, and iritis by warm medicated sprays applied by means of a steam atomiser. The spray is directed into the eye, the lids meanwhile being held apart. The duration of treatment varies from 5 to 10 minutes at each sitting. He finds remedies such as bluestone, alum, etc., act better when applied to the eye immediately after the warm spray.

(8) The long title of **Darier's** paper sums up fairly well his opinion of the great value of dionine. The paper will repay reading in the original. The remarkable statement is made that a retina, which had been completely detached for two months, and had resisted treatment by subconjunctival injections, became entirely re-attached in two days after the injection of 2 centigrammes of dionine. To the profuse *inondation lymphatique*, or, as the Germans call it, *lymph-überschwemmung*, which dionine causes, is to be attributed its value as an antiseptic. The following is a list of some of the conditions in which Darier uses dionine, always taking care to warn the patient against possible pain and swelling: chronic conjunctivitis; before operation on acute or subacute glaucoma; after (but not immediately after) cataract operations; after removal of foreign bodies from the cornea and to assist in the loosening of firmly embedded foreign bodies by setting up corneal œdema; in septic ulcer of the cornea and infection of cataract operation wounds; in superficial diffuse corneal infiltrations, and in interstitial keratitis; and, finally, to relieve the agony of acute glaucoma where operation is refused. ERNEST THOMSON.

(9) **Lindahl** relates thirteen cases of sympathetic ophthalmia, of which six were treated, without remarkable effect, by mercurial inunctions, and the others by salicylate of sodium. The facts of the last-named are briefly as follows: (1) Boy, 6 years, injured in left eye by an arrow. The right eye became affected a month after the accident. Upon admission, the very irritable left eye showed an adherent leucoma at the corneal limbus. As regards the right eye, there was keratitis punctata, posterior synechiæ, and the pupil was filled with exudation: V.=fingers at three mètres. As the left eye still retained some sight, enucleation was not undertaken, but

sodium salicylate was tried. After a month's treatment, the eye was almost free from irritation, and the patient could see fingers at six mètres. (2) The sclera of the left eye of a woman, aged 33 years, was ruptured by a blow from a hammer. The right eye became affected two months afterwards. The left eye was then forthwith enucleated, and the salicylate freely given. The right eye recovered very quickly, but after a fortnight the patient, who was pregnant, had to be sent to a lying-in hospital. When seen again seven weeks later the eye had become much worse, showing numerous precipitates and synechiæ. Still, it improved gradually under treatment by salicylate, and after transfixion of the bulging iris, vision rose to 0.8. The patient remained under observation for two and a half years. (3) A woman, aged 44 years, was butted in the right eye by a cow. Three weeks later the other eye became affected. Removal of the right eye had no effect, the left eye growing worse until V. = fingers at ten feet. The salicylate was then administered with good effect. The left eye improved speedily, and vision rose to 0.15. About six months later, however, the eye suddenly became blinded by detachment of the retina. (4) A man, aged 25 years, had a metallic particle extracted from his left eye by the Hirschberg magnet. This was followed by sympathetic ophthalmitis of the other eye. Enucleation of the wounded eye, administration of the salicylate, and recovery with normal vision in twelve days. The patient remained under observation afterwards for three weeks. (5) A man, 53 years, presented a perforating wound at the limbus of the right eye, prolapse of iris, and slight optic neuritis, with V. = 0.6. The left eye manifested numerous synechiæ, dust-like vitreous opacities, lowered tension, and V. = 0.2. The salicylate was prescribed with the result that R. V. = 0.4, and L. V. = 0.7. (6) A woman, 47 years, presented a scleral rupture, due to a blow from a stone on her left eye. Five weeks after the injury, the right eye became affected with serous iritis. The salicylate was prescribed. Recovery in a month with V = 0.7., and four months later V. = 0.9. (7) Sympathetic choroiditis with deposits on Descemet's membrane followed the removal of a piece of iron by the magnet from the left eye of a lad, aged 17 years. The wounded eye was removed. The salicylate produced no obvious effect, but slow recovery ensued under mercurial inunctions. The inflammation was in this case of an extremely mild character, and sight remained normal during the entire process.

Lindahl draws the following conclusions: (1) in doses of 4 to 6 grammes daily sodium salicylate is a most efficacious remedy against sympathetic iritis or irido-cyclitis; (2) its

effect is prompter and more certain than that of mercurial inunctions; and (3) it seems to give traumatic irido-cyclitis a milder character.

J. WIDMARK.

(10) A man, aged 52 years, had suffered from syphilis for 25 years. The sight of his right eye had been lost in 1900, and the sight of the other eye began to fail rapidly in 1902. **Bosse** found a neuritic atrophy, which slowly became worse until June, 1903. Knee-jerks absent. The diagnosis was therefore tabetic atrophy. **Bosse** gave at first extract of oxen's testicles, and, later, injections of spermine, sixteen in all. Since then the progress of the blindness has been hindered, and there has even been a sensible improvement, which persisted until the date of the last examination, five months later.

H. DOR.

(11) In cases of inflammation of the lacrymal passages, **Corner** applies tincture of iodine to the nasal mucous membrane covering the front of the anterior turbinal bone. He avoids, however, the opening of the nasal duct.

VII.—MISCELLANEOUS.

Hanke, Victor.—Plexiform neuroma of the lid. (*Das Rankenneurom des Lides.*) *Graefe's Archiv f. Ophthalmologie*, 59, 2, 11 Oktober, 1904.

The diagnosis of plexiform neuroma is fairly easy. Its favourite site is the region of the temple, the lids, the neck, and the back. It forms a soft, ill-defined swelling, which if attaining a large size, may sprout into lobular appendages. It reveals to the touch harder, curly, and rope-like portions within. The overlying skin is normal; and compression causes no sensation of pain. It is usually congenital, or appears during the first few years of life, and, although benignant, is of steady growth, gradually leading to absorption of the neighbouring bones. The only other disease for which it may be mistaken is lymphangioma; this latter affection may, indeed, as **Hanke's** anatomical researches prove, form a kind of complication of the original tumour. Early excision is always advisable, although a complete removal is hardly possible, owing to the indifferent demarcation of the tumour. It should be borne in mind, however, that incomplete removal seems occasionally to start a more rapid growth. The anatomical examination of two specimens gave interesting results. Hanke shows them to consist of medullated nerve

fibres, surrounded by abundant peri- and endoneural proliferation, and ensheathed by a capsule of dense connective fibres. These specific elements are suspended in a matrix similar to the tissue of soft fibromatosis, which contains abundant lymphatics and may gradually merge into genuine lymphangioma. By and by, the nervous elements entirely disappear, while the perineural elements undergo a myxomatous change; but all stages of this process may be seen at different points at the same time. Both of Hanke's cases had also nodular neuro-fibromata in other parts of the body, a complication as rare as it is interesting.

R. GRUBER.

Nuel.—On sympathetic Amblyopia. (*De l'amblyopie sympathique.*) *Bull. et mém. de l'académie de Méd. de Belgique*, 1904.

In 1897 Nuel described, under the name "sympathetic amblyopia," an affection liable to supervene in one eye after injury of its fellow. In some respects, therefore, the ailment recalls sympathetic ophthalmia, and in others traumatic neurosis. At the time of his first communication Nuel had collected sixteen cases, and since then he has observed six others, all of which confirm the description originally given by him in 1897.

Months, even a year, after loss of an eye from traumatism, at a time when that eye has become quiescent, there supervenes in the other eye a slight reduction in sight, accompanied perhaps by contraction of the visual field. There is headache and, possibly, photophobia. The patient complains of obscurations of vision upon attempting to use his eye. The condition persists for a long time, with periods of amelioration and aggravation. Sight diminishes more and more, without however being totally lost. The field of vision continues to contract. There is no hyperæmia of the eyeball. The ophthalmoscopic findings are normal. Finally, a moderate degree of sclerosis of the pupil comes on. Prolonged rest may bring about improvement, but relapses are to be apprehended for long. Nuel has witnessed complete recovery two or three times only. Even when the sight is merely somewhat lowered, the industrial value of such a patient is much lessened and sometimes even lost, and that for ever. These cases remind one of simulation, but they are real.

H. COPPEZ.

Truc. — Amputation of the anterior segment of the eyeball; histological examination of an old stump. (*Amputation du segment antérieur: Examen histologique d'un moignon ancien.*) *Bull. et Mém. de la Soc. française d'Ophtal.*, 1904, p. 436.

The preliminary part of **Truc's** paper is devoted to singing the praises of the operation of abscission. The remainder describes the histological appearances of an eye lost by an accident with ammonia. Abscission had been performed, but, eventually, it was decided to remove the stump completely. There was a complete absence of inflammation behind the cicatrix left by the first operation. The deeper parts of the cicatrix were attached to the remains of the lens, ciliary processes, and vitreous body. The retina showed a marked neuroglial proliferation, tending to cause complete disappearance of the proper elements. H. DE V.

Lawson, Arnold.—A case of monocular vertical nystagmus. *Reports of the Society for the study of Disease in Children*, Vol. IV (1904), p. 118.

Lawson reports a case of monocular vertical nystagmus following a perforating ulcer of the cornea, probably caused by ophthalmia neonatorum.

Chevallereau, A. and Chaillous, J.—The etiology of iritis. (*Recherches sur l'étiologie de l'iritis.*) 2^e livraison du recueil des travaux X^e congrès international d'ophtalmologie, Lucerne, septembre, 1904.

Chevallereau and Chaillous present a statistical study of 131 cases of non-traumatic iritis seen since April 1, 1903, at the hospital des Quinze-Vingts. 42 per cent. of the cases were in females, and 58 per cent. in males. A majority of the cases were met with in adults, 20 to 50 years of age. In 104 of the cases a more or less probable cause was found for the disease. Syphilis, acquired or inherited, accounted for 52 cases; 9 were associated with tuberculosis and a like number with gonorrhœal arthritis; 7 were connected with articular rheumatism; and 3 with zona ophthalmica, dysmenorrhœa, diabetes, albuminuria, and influenza respectively. The less common causes included amenorrhœa, recent childbirth, weaning, hysterectomy, abscess of neck, vaccination, and other eye affections. H. DE V.

Hirsch, G.—A Foreign body in the conjunctival sac for nearly two years. (*Fast zweijähriges Verweilen eines Fremdkörpers im Bindehautsack.*) *Wiener Klin. Rundschau*, 14 August, 1904.

Hirsch removed from the upper conjunctival cul-de-sac of a man, aged 27 years, a piece of chopped straw, measuring 10 mm. by 2 mm., which had been there for nearly two years, and which had given rise to severe inflammation. J. F. S.

Inouye.—Upon rheumatic subconjunctivitis. (Ueber Subconjunctivitis rheumatica.) *Ophthalmologische Klinik*, No. 23, 1903.

This transitory form of episcleritis, which does not go on to the formation of nodules, is sometimes connected with a cold or a chill, and may attack one or both eyes. Ciliary redness, pain, photophobia, and lacrymation are prominent symptoms. Slight iritis may complicate the disease. Sodium salicylate or aspirin generally cures the disease without any local treatment.

MAX P.

Rockliffe, W. C.—Optic neuritis following concussion of eyeball. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 182.

De Micas.—Foreign bodies free in the anterior chamber. (Note clinique sur les corps étrangers libres de la chambre antérieure.) *Recueil d'ophtalmologie*, janvier, 1904.

Judging from the comparatively few cases published, it would appear that cases of foreign bodies (from without) lodging in the anterior chamber, are somewhat rare. **De Micas** gives an account of a patient who retained a piece of stone in her anterior chamber for seven months without discomfort. At the end of that time symptoms of irritation were set up, and the resulting pain and lacrymation brought her to the author, who extracted the splinter through a peripheral corneal section, and excised a small piece of damaged iris. A detailed account of five other cases is given in this article. In many instances the foreign body, whether eyelash, steel, stone, or glass, has remained in the eye, perhaps unknown to the patient, for months and even several years. This tolerance to substances, which are often more or less septic, is peculiar. Sooner or later, however, and for little if any accountable reason, they set up inflammatory changes, generally in the form of kerato-iritis—but they may vary from a simple hyperæmia of the iris to suppurative iritis accompanied by irido-choroiditis, panophthalmitis with phthisis bulbi and sympathetic ophthalmitis. In all cases, whether quiescent or not, it is advisable to extract the foreign body by means of forceps through a peripheral corneal section. When the iris is damaged, a small iridectomy should be performed. It is well to instil physostigmine before the operation, in order to contract the pupil and thus to diminish the risk of the object dropping into the posterior chamber.

J. JAMESON EVANS.

Motolese.—Two cases of bilateral congenital paralysis of all the extrinsic muscles of the eye in two members of the same family. (Due casi di paralisi congenita

doppia di tutti i muscoli estrinseci dell'occhio in due persone della stessa famiglia.) *Annali di Ottalmologia*, XXXIII, p. 107.

Motolese makes an interesting contribution to our knowledge of congenital ophthalmoplegia. He reviews the cases published from 1872 to 1902, and concludes that congenital ophthalmoplegia may be complete or incomplete; that it is often accompanied by other developmental anomalies; and that its etiology is still known but imperfectly. In the forbears of the patients one now and then finds syphilis, tuberculosis, alcoholism, and psychical traumatism, but in most instances the *anamnesis* is negative. The congenital defect of ocular movement may be just as much due to lesions of the central nervous system, especially of the nuclei, as to primary lesions of the muscles themselves.

A. ANTONELLI.

REVIEWS.

Das Schielen: Aetiologie, Pathologie, und Therapie. CLAUD WORTH. Autorisierte deutsche Ausgabe von Dr. E. H. OPPENHEIMER. Berlin: VERLAG VON J. SPRINGER, 1905.

A German translation by Dr. E. H. Oppenheimer of Mr. Claud Worth's well-known book on squint.

Bulletin de la Société belge d'Ophthalmologie, No. 17. Bruxelles: MAISON SEVEREYNS, 44, Montagne aux Herbes Potagères. 1905.

This slim volume of 71 pages contains an account of the cases shown, and of the communications read, at the meeting of the Belgian Society of Ophthalmology, held at Brussels, on 27th November, 1904. True to their spirit of enterprise, the editors have issued with the volume printed abstracts of the communications. The contents of the book will be abstracted in due course for the columns of THE OPHTHALMOSCOPE.

The Medical Annual; 1905 (23rd year). Bristol: JOHN WRIGHT & Co., Stone Bridge. Price 7/6.

The several sections of that useful compendium, the *Medical Annual* (1905) dealing with the eye, are written by Dr. A. Hugh Thompson, and they review adequately the chief ophthalmological work accomplished during the past year. The volume,

which has now attained portly proportions, also includes a number of stereograms of eye conditions, reproduced from Neisser's *Stereoskopischer Medizinischer Atlas*, section of ophthalmology, edited by Professor W. Uthhoff, of Breslau. These are accompanied by explanations translated from the German text, also the work of Dr. Thompson.

Transactions of the American Ophthalmological Society,
Vol. X, Part II. Hartford: Published by the Society,
1904.

This well printed and readable volume, which has just reached us, contains the papers read and the discussion which took place at the Fortieth Annual Meeting of the American Ophthalmological Society held in July, 1904, at Atlantic City. It includes twenty-nine communications, of which some have already been published elsewhere. It further contains the report on standard reading types constructed in accordance with the report of a Committee adopted by the Society in May, 1903 (*see* THE OPHTHALMOSCOPE, Vol. I, page 35). The Committee, it may be remembered, consisted of Charles H. Williams, William Thomson, W. S. Dennett, and John Green.

Die Brille und ihre Geschichte. Von DR. EMIL BOCK,
pp. 62. Wien, 1903. Verlag von Josef Safar. Spectacles
and their History. By Dr. Emil Bock, Vienna, 1903.

The historical aspect of medicine is gradually receiving the attention it deserves. Dr. Bock's valuable contribution, which deals with the origin and development of spectacles, is made especially attractive by numerous illustrations and by the way the subject is treated with reference to Art. The name of the inventor of spectacles is not undisputed; for Europe, the end of the thirteenth century may be considered as the approximate date of the invention, with which are associated the names of Roger Bacon, Armati, and Spina. But not unlikely the palm really belongs to the Chinese. Before the laws of optics became known through Kepler, the action of lenses was considered a species of witchcraft; doctors did not recommend eyeglasses, and as late as the nineteenth century considered sight-testing beneath their dignity, so that, after all, our latter-day "optologists" are fighting for their historical rights. A contemporary member of the profession has also his prototype in the fourteenth century, who declared spectacles to be superfluous, thanks to the never failing remedies in his possession. Thus we see spectacles "doomed" soon after their invention. This hostile attitude of doctors, the costliness of eye glasses, the ridicule generally excited by their appearance, and the comparatively rare demand for their use in those happy times, all explain the fact why they were not much

worn, and consequently not often represented in pictures until the nineteenth century. Dr. Bock's elaborate list of such pictures must, therefore, be considered as a welcome appendix to his instructive and artistic book. C. MARKUS.

Die Berufs oder Gewerbe—Erkrankungen des Auges.
Trade or Avocation Diseases of the Eye. By Dr. VICTOR HANKE, Assistant to Professor Fuchs, of Vienna, 1904, pp. 25.

This is one of a collection of short essays written by specialists to diffuse sound information on the diagnosis, pathology, and treatment of diseases of the eye, under the editorship of Professor A. Vossius, of Giessen. Dr. Hanke commences by discussing the difference, as understood by the German Insurance Companies, between an accident leading to sudden loss or impairment of vision, and the more gradual impairment which is a common consequence of particular trades or employments. He takes two men working in an india-rubber factory. One, owing to the entrance of water to an overheated boiler is injured by the escape of steam, and is promptly blinded. The other, engaged in the vulcanising process, loses his vision in the course of a few weeks. The former is a case of accident, the latter is the result of the patient pursuing an unwholesome calling which has induced retrobulbar neuritis. The Insurance Company would hold themselves to be liable in the former, but not in the latter instance. Dr. Hanke's observations in this pamphlet are chiefly directed to those affections which are the result of the more gradual action of the various occupations in life, and do not deal with the sudden lesions which are properly entitled accidents.

He enumerates amongst inflammations of the conjunctiva those produced by dust, smoke, and hot air, as is seen in cellarers, glassblowers, steel workers, cooks, and those produced by exposure to wind and weather, such as occur in street cleaners, cab drivers, motor drivers, conductors, masons; and, lastly, the conjunctivitis observed in those busied with the removal or distribution of human or animal excrements in which the air is loaded with ammonia, hydrogen sulphide, and other products as occurs in nightmen, ostlers, when the conjunctiva is often so sharply inflamed that the French have denominated these forms as "conjunctivitis of animal origin.*" Conjunctivitis, again, is often seen in the months of August and September in the South of Europe, amongst those who handle the bulbs of tulips and hyacinths. Two types of this form have been distinguished—the "old" (sometimes named "eel" disease) or

* This form of inflammation is now commonly called "Parinaud's" or "Septic Conjunctivitis."—EDITORS.

macroscopically recognisable affection caused by raphides, and also by the scales of *Leptus autumnalis*; and the "new," which appears to be of bacterial origin. In regard to the cornea, the affections due to occupation are the impregnation of the cornea with minute fragments of stone which may be observed on close inspection with a hand-lens. Then there is the band-like nebula, which has been described by Topolanski in hat trimmers, due to epithelial scales more or less modified, and particles of hair which have become adherent to, or imbedded in, the cornea. The same appearances are seen in plasterers, quarrymen, and filers, who are apt to suffer from pterygia, and in oyster dealers in whom perforating ulcers occur, leading, if perforation is complete, to loss of the eye; and as no special microbe has been found, the lesion has been attributed to the chemical composition of the shell acting injuriously on the membrane. Another group of corneal affections is seen in the nitronaphthalin nebula, described by Frank, the author, and Silex, when there is a diffused greenish-brown nebula of the epithelial and sub-epithelial layers, and the typical nebula of anilin manufacturers, in which the cornea and conjunctiva present a sepia-brown discoloration with minute flattened vesicles corresponding to the exposed part of the eye between the lids.

Atrophic disturbance of the cornea has been observed in those who work under high pressure of the air in caissons. It is associated with anæsthesia of the fifth nerve and other nervous symptoms. The treatment of all these forms of disease consists in improving the conditions under which work is done, in promoting personal cleanliness and good ventilation, removal of foreign bodies when present, iridectomy, if required by opacity, infraction with ointments, and the adoption of the ordinary principles of treatment. In regard to affections of the lens, he points out that exposure to sun and fire is apt to lead to the formation of cataract. Meyhöfer, in 1886, reported that out of 506 glassworkers there were 59 cataracts, or 11.6 per cent., and of these 90 per cent. were under 40 years of age. Hirschberg, in 1898, pointed out that the opacity of the left lens was earlier than that of the right, clearly owing to its being that eye which was most exposed to the heat. The temperature of the stations occupied by glassblowers is, according to Meyhöfer, 65° C. (149° F.). The ultra-violet rays are those responsible for the production of cataract.

In regard to the remaining tissues of the eye, the sclera, iris, and choroid are scarcely ever affected by disease due to occupation, but the optic nerve and retina are liable to various troubles, which Dr. Hanke describes at some length. Thus, in the manufacture of caoutchouc, the vapour of the bisulphide of carbon, which is apt to produce central scotoma

and impairment of the colour-sense for red and green, the amblyopia is accompanied by pallor of the disc. Nitrobenzol or mirbanol (artificial bitter almond oil), and dinitrobenzol, to the former of which anilin workers are exposed, and to the latter, roburite and securite workers lead to contraction of the field of vision. Anilin acts on the retina, so that the fundus presents an intense violet colour. Lead occasions in some, more or less rapidly supervening double, more or less complete, amaurosis, with but slight hyperæmia and cloudiness of the papilla. This form is usually accompanied with attacks of lead colic, and is supposed by Kolisko to be due to paralysis of the centres and nerve tracts consequent on strongly marked chronic œdema of the brain, the pupil reaction being preserved. It is associated with plumbic nephritis and uræmia. This is a second type of lead amblyopia dependent on disease of the optic nerves of an inflammatory nature, not, however, always presenting physical or ophthalmoscopic changes, such as retrobulbar neuritis, but leading in 10 per cent. of the cases to permanent amaurosis. In 20 per cent. of the cases the impairment of vision commences suddenly, but usually more slowly. Such cases usually show the blue line on the gums, colic, epilepsy, anæmia, and cachexia. The field of vision presents a central, or much more rarely, an annular, scotoma, thus resembling alcoholic amblyopia, or a peripheral contraction of the field, the central area being preserved, which may be regarded as peripheral retrobulbar neuritis, the "amblyopia periferica" of Samelsohn and Stod. In all these cases there may be either a direct lesion of the optic paths, or a secondary toxic cerebral lesion, or secondary troubles consequent on vascular changes. Hemipopic contraction of the field of vision is rare. Dr. Hanke also calls attention to ankylostomiasis and its effect on vision. Lastly, the author considers the nystagmus of miners, which he regards as partly due to position and partly to insufficient illumination; the orbicularis spasm of watchmakers; and the cramp of the ocular muscles observed in military exercises. He concludes by arranging all the above-mentioned affections under the following three heads:—1. Direct lesions owing to solid or gaseous injurious agencies; 2. Indirect lesions acting through the circulation, or toxic agencies acting directly upon the optic nerves; and, 3. Neuropathic affections.

HENRY POWER.

Syphilis de l'Œil et de ses Annexes. Par le Dr. F. TERRIEN, ancien chef de clinique ophtalmologique de la Faculté de Paris. Paris: G. STEINHEIL, 2, Rue Casimir-Delavigne. 1905. P. 316. Prix, 4 francs.

Dr. Terrien's opportune book upon syphilis of the eye and of its appendages commences with brief sections upon anatomy and methods of examination. It then discusses the ocular mani-

festations of hereditary syphilis, distinguishing between the early (*syphilis héréditaire précoce*) and the late (*syphilis héréditaire tardive*) forms. Acquired syphilis is next taken up, and the different affections of the eye are treated under the several headings of primary, secondary, tertiary, and parasyphilitic. The book (which is illustrated) concludes with a chapter devoted to treatment. Such is, in short, the general plan of Terrien's little treatise on ocular syphilis.

Terrien insists that syphilis of the eye should always be regarded as a serious affair, partly because of the delicacy of the structures involved, and partly because it is sometimes merely a manifestation, so to speak, of cerebral syphilis. The lesions should therefore be treated as energetically and as early as possible. Discussing the transmission of the inherited disease to the second or third generation, Terrien, while not denying the possibility altogether, maintains that the truth of the theory has never been demonstrated scientifically. In point of fact, it is impossible in alleged instances to exclude the contingency of syphilis having been acquired by one of the parents.

The occasional occurrence of iritis as a manifestation of early inherited syphilis was noted by Evanson and Maunsell (1841) and by William Mackenzie (1854). In 1863 Mr. Jonathan Hutchinson, as most people know, published twenty-three cases in babies, whose ages ranged from six weeks to two months. That the disease is really very rare is nevertheless shown by the fact that some observers of large experience in children's ailments, notably Hensch and George Carpenter, have never recognised a case. Terrien attempts to account for the rarity of iritis in newly-born babies on the assumption that the symptoms are so trivial that it may readily escape recognition. In somewhat older children, on the other hand, it is simpler to detect, and is correspondingly more frequent. The other ocular manifestations of early hereditary syphilis, according to our author, include various forms of choroido-retinitis, retinitis pigmentosa, optic neuritis, and the changes described by Antonelli—as pigment around the optic disc and vascular alterations—as so many stigmata of the disorder in question. Finally, Terrien enumerates several malformations of the eye—as, for example, coloboma, microphthalmos, buphthalmos, and cataract—as being more or less closely connected with congenital syphilis.

Amongst the ocular manifestations of later hereditary syphilis, interstitial keratitis occupies the first place, by reason both of its frequency and of its clinical importance. Terrien gives a good account of the disease, but his description offers nothing particularly novel to ophthalmic surgeons. The statement, however, that ulceration of the cornea is never met with (p. 55), appears to

call for modification, inasmuch as several such cases have been published by trustworthy observers. The complications of interstitial keratitis, according to Terrien, include irido-choroiditis, opacities of the lens, alterations in tension of the eye, scleral ectasiæ, and bullous keratitis. To this list Terrien might well have added scleritis and staphyloma of the cornea. As to the ætiology of interstitial keratitis, Terrien believes that more than one-half the cases are due to hereditary syphilis. It is, however, the outcome of a nutritional disturbance, induced by various morbid influences, such as syphilis, tubercle, rheumatism, malaria, gout, influenza, and so forth. Since syphilis is the commonest cause of this nutritional defect, that diathesis becomes the predominating factor in the determination of the keratitis. The influence of injury in setting up the disease is mentioned, and a reference made to the cases reported by Bronner ("Brønner" in the text) and Stolper respectively. Amongst other eye affections of late hereditary syphilis, Terrien mentions diseases of the optic nerve, paralysis of the muscles of the eye, and keratomalacia. The inclusion of the last-named malady strikes one as rather curious, seeing that a majority of the cases occur in children during the first year or eighteen months of life, and that syphilis is by no means so often the cause as is tuberculosis.

Terrien's remarks upon the general treatment of syphilitic diseases of the eye reflect the present tendency of the French school of therapeutics. As is well known, the latter introduce mercury into the system by intramuscular or intravenous injections rather than by the mouth or the skin, as usually practised in England. Practically, Terrien advises that all specific ocular manifestations be treated exclusively by the injection of soluble mercurial preparations. For intramuscular injection he prefers the biniodide of mercury, dissolved in distilled water by the aid of sodium iodide. Here is the exact formula: Mercury biniodide and sodium iodide, of each 20 centigr.; distilled water, 10 c.c. He reserves the injection of such insoluble mercurial preparations as calomel or metallic mercury for cases in which the employment of the soluble preparations has remained without effect. For intravenous injections Terrien adopts a 1 per cent. solution of mercury cyanide, as recommended by Abadie. Of this solution one cubic centimetre is injected into the veins, preferably into those at the bend of the elbow, and the operation is repeated every second or third day, or even daily in grave cases, until fifteen or twenty injections have been given. In certain forms of obstinate choroido-retinitis, with or without vitreous opacities, Terrien combines subconjunctival injections with the other measures. With regard to the employment of iodine, Terrien endorses the view adopted by some other French ophthalmologists, namely, that it is almost useless in specific affections of the deeper

structures of the eye, and that its use should be kept for perioritis, gummatous infiltrations, and trigeminal neuralgia. Iodine, indeed, is calculated to do more harm than good in ocular syphilis, properly so-called. Under some special circumstances Terrien recommends the intramuscular injection of iodipin or of lipiodol.

In conclusion, it may be said that Terrien writes in an attractive way, and that his book is singularly free from typographical blunders. At the same time, it may be doubted whether Mr. Nettleship would recognise his name as it is printed on page 37, where it is spelled "Netsleshipp." Two criticisms may be made upon the book: first, that the writer would be well advised in his next edition to omit extraneous matter, particularly the sections dealing with the anatomy of the eye, the methods of examination, and the diagnosis of ocular palsies; and, secondly, that Figs. 1 and 16 should be rendered true to nature, which they assuredly are not as they stand at present.

NOTES AND ECHOES.

The inventor of spectacles.

APROPOS the interesting review, published in another column, of Dr. Emil Bock's *Die Brille und ihre Geschichte*, it may not be generally known that the following epitaph is to be found upon Amati's tomb: "Here lies Salvino d'Amati of Florence, inventor of spectacles. May God pardon his sins. A.D. 1317."

* * * *

"The World's greatest oculist."

MEDICAL men form a most exclusive class and live their real lives—that is, their professional and scientific lives—in a curiously exclusive world of the own. It takes a lifetime spent within the walls to realise the actualities of that singular little microcosm. Yet your average journalist, with a kind of Falstaffian and pot-valiant courage, thinks he knows all about medical matters, and is ever ready to inform the public about men and things medical, at a payment of so much a line. Even the better journalists and the better journals are apt to go astray. Not long ago, for instance, an absurd paragraph appeared in "M.A.P." Mr. T. P. O'Connor's well-known weekly, under the heading of "The World's Greatest Oculist." The

medical profession, both at home and abroad, will be amused to find that the gentleman indicated is Professor Pagenstecher, in each of whose "finger-tips seems to live a separate brain—an independent, conscious visioning power." The Herr Professor is described as a small, slight, old man, who, with gray hair and long beard, in which the brown of youth still lingers, looks like an Englishman. "Over the vine-covered door of his famous Klinik in the Taunus Strasse," so the account runs, "hundreds of grateful men and women to whom Pagenstecher has given back the joy of life, might unite in inscribing, 'He maketh the blind to see.'" That the learned Professor is a scientific as well as a fashionable ophthalmic surgeon everyone will agree. He himself, however, would probably be the first to deprecate the proud title conferred upon him by "M.A.P."

* * * *

Confessions of an English Doctor, a book recently published by an anonymous author, ostensibly gives an inside view of the profession, and certainly succeeds in casting

a lurid side-light upon some of the shadier spots in medical life. In a distant way it reminds one of that rather egregious American publication, Cathell's *Book on the Physician himself*, and like it, contains a wealth of advice, most of it superfluous to any individual endowed with a grain of common sense. The author of the *Confessions* spares us, however, the heart-rending little tags of verse that are to be found upon almost every page of the latter production—a small thing, perhaps, but something to be thankful for! The writer of the English book was educated in Edinburgh; but that is a detail, and we notice it here merely to draw attention to the unflattering picture of a clinical assistant given under the heading "Consultants and Specialists." The description, we feel confident, will be recognised by none of the readers of *THE OPHTHALMOSCOPE*, but here it is, so that they may judge for themselves. "As to those working only as clinical assistants," says our sapient though anonymous author, "waiting and striving to get appointments, they are numerous. Hanging around hospitals, dabbling in special work and forgetting their general information; constantly on the heels of senior members of staffs, cringing, fawning, sneaking about, with carefully pronounced 'Sirs' for seniors. Some of these men irritate me, with their careworn,

disappointed countenances, and their hopeless general knowledge. They would have been better working as general practitioners with a view to distinguishing themselves. They cannot properly afford to give their services year after year, until at about forty years of age they begin to earn a few pounds. For years some of these men persevere accumulating a little on narrow lines, but degenerating broadly. They may get a paying appointment worth having at forty, some of them, and a consulting practice, that will bring a balance at the bank, at fifty. But what a struggle!"

* * * *

**Clinical
Assistants.**

TALKING of clinical assistants, we gather, from a recent issue of the *Medical News* (New York), that Dr. C. A. Oliver, one of the editors of THE OPHTHALMOSCOPE, has organised an "Association of Clinical Assistants of Wills' Hospital." Membership by ballot is open to those who have been or are connected with one or more of the clinical services in the Hospital for a period of not less than three months. The importance of a society where clinical workers in ophthalmology may meet, report cases, and enjoy free discussion of knotty problems brought under their daily notice in the oldest American eye hospital, has thus been realised. Those acquainted with Dr. Oliver's energy and tact cannot doubt for a single moment that his efforts will be crowned with complete success.

* * * *

**Appointments
and Lectures.**

MR. J. H. PARSONS has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital, City Road, E.C. Dr. Quende has been nominated Professor of Clinical Ophthalmology at Marseilles. The Hunterian Lectures on "The changes produced by inflammation in the Conjunctiva" were delivered by Mr. M. Stephen Mayou before the Royal College of Surgeons of England on February 27th and March 1st and 3rd, 1905.

* * * *

New Eye Hospitals.

THE eye hospital, founded under the provisions of Baron Adolphe Rothschild's will, will be opened for the reception of patients in about a couple of months. It is in Paris, close to that extraordinary and picturesque specimen of landscape gardening,

the Buttes Chaumont, in the crowded quarter of Belleville, in the midst of a large working-class population. The staff includes, among others, Trousseau, Sulzer, Millée, Florand, and Picqué. The new building of the Manhattan Eye and Ear Hospital, which is to be erected in East 63rd Street, New York, will afford accommodation for 400 ordinary, and 50 private patients. The building will consist of twelve stories.

* * * *

News Items. DUKE Karl Theodor of Bavaria celebrated his jubilee as an ophthalmic surgeon at Munich on the 23rd February, 1905, when numerous congratulations reached His Royal Highness. The death is announced of Dr. Joaquin X. Perlire da Cunha, who occupied the chair of ophthalmology in the University of Rio Janeiro. Professor Jean Coppez, the director of the Ophthalmological *Clinique* in Brussels, has resigned.

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ORIGINAL COMMUNICATIONS.

UPON FIVE CASES OF FAMILY DEGENERATION OF THE CORNEA

BY

ROBERT W. DOYNE,
M.A., F.R.C.S.,

SYDNEY STEPHENSON,
M.B., F.R.C.S.E.,

READER IN OPHTHALMOLOGY IN AND
THE UNIVERSITY OF OXFORD,
ETC., ETC., ETC.

OPHTHALMIC SURGEON TO THE
EVELINA HOSPITAL, LONDON,
ETC., ETC.

*Arthur L———, 12 years, first seen on 7th October, 1904, with a history that his eyes had been subject to periodical attacks of inflammation for about twelve months. Upon examination, R.V. = 6/60 —3.0 D. sph. — 6/12. L.V. = 6/60 —3.0 D. sph. = 6/24. Right cornea more or less nebulous, with some curious-looking calcareous streaks and particles at the junction of its lower and middle third. The appearances were

*This patient was shown at a meeting of the Ophthalmological Society on November 10th, 1904.

peculiar, and reminiscent of a transverse calcareous film at an early stage of development. A very faint, more or less generalised, opacity of the left cornea was present. The main, and by far the most striking, opacity (as shown in figure 1) formed, however, a tongue-like process extending rather obliquely across the cornea for about three-quarters of its extent, and occupying much the same position as a transverse calcareous film. It was separated from a similar opacity near the limbus by the jagged, irregular line shown in the illustration. Upon examining the nebula with a strong glass, it was seen to contain, more especially towards its nasal (inner) part, numerous small round, oval, or irregular areas, of coal-black hue, presenting a deceptively close resemblance to particles of pigment. Some indication of the existence of these areas could be obtained with focal illumination alone. Towards the tip of the process were a few greyish-white points, also shown in the accompanying illustration. The first-named areas, although they resembled bits of coal, could be seen to be of a greenish colour when the iris and not the pupil formed the background. Upon examining them with a small ophthalmoscopic mirror, armed with a strong *plus* glass, they were found to transmit a reddish glow from the fundus oculi, whereas the rest of the opacity had a dark colour. The conclusion was accordingly inevitable that they represented so many bits of the cornea that for some reason or other had failed to become leucomatous, or having undergone that change, had, for some reason equally unknown, cleared.

An enquiry into the family history of the patient, and an examination of some of his relatives, revealed a curious state of things. The father, a working carpenter by trade, was 48 years of age. When aged 39 years he suffered from what he calls "ulcers" of his left eye, which after an illness of about twelve months' duration, lost its sight. Syphilis denied. Upon examination, R.V. = hand movement; L.V. = $\frac{3}{80}$ and Jaeger No. 6 (words). The right eye was markedly divergent. The central parts of the cornea were covered with dense, whitish-grey, calcareous-looking opacities, so that the pupil was wholly hid. The peripheral parts of the cornea alone remained free from cloudiness, a relative freedom that was more pronounced up and in than elsewhere. Tension normal. The inner and outer side of the left cornea were hazy, and the anterior epithelium was distinctly roughened. A dense opacity (shown in figure 2) crossed the middle third of the cornea, covering most of the pupil, and it contained many pigment-like dots, altogether analogous with those described as present in the first patient. The epithelium over the opacity was roughened. Tension and sensation were normal.



FIG. 2.

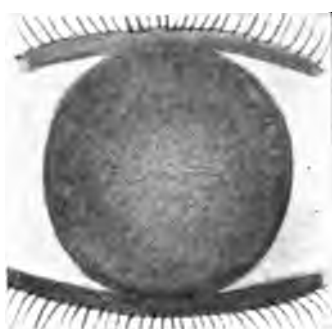


FIG. 3.



FIG. 1.



FIG. 4.



FIG. 5.

R. W. DOYNE and S. STEPHENSON.

Five Cases of Family Degeneration of the Cornea.

The mother of this man—that is, the paternal grandmother of the original patient—was afflicted with “bad eyes” from youth, and in adult life her sight became so poor that she had to be led about. She died at 65 years. The remaining members of this generation of the family included three sisters and one brother, of whom one sister, now dead, suffered in the same way.

The mother of Arthur L——, who was examined, had nothing amiss with her eyes.

Eight living children have been born in the family, and of these, four, including the patient Arthur, were affected in respect of their eyes. No children had been born dead. A week after the birth of a boy, now aged 17 years, the mother had what she called “a false conception,” which, whatever it may actually have been, was certainly not a miscarriage or an abortion.

The three members of the family whose eyes were affected, namely, Ada, Henrietta, and Minnie, were examined with the following results:—

Ada, aged 24 years, whose sight began to fail when she was 16 or 17 years old. The left eye antedated the right by about three years. At no time have there been any obvious symptoms of inflammation. Her condition, when examined by us, was as under:—R.V. = fingers at 0·5 metre and No. 19 Jaeger; L.V. = fingers at 0·25 metre and less than No. 20 Jaeger. The cloudy corneæ showed no signs whatever of inflammation, and the case might very well have passed for one of interstitial keratitis but for that and for certain other facts. In the right eye the iris and the pupil could be recognised dimly through the milky cornea, but the faintest indications only of those structures could be seen through the cornea of the left eye (see figure 3). There was a slight reflex from the right fundus. As regards the left cornea, a lattice-like arrangement could be more or less plainly distinguished, especially in the central parts of the cornea. Tension was normal; the cornea retained their sensitiveness to touch. The left eye had become divergent.

Henrietta, aged 22 years, whose eyes began to fail when she was nine years old, and have slowly become worse since then. When she was between 16 and 18 years of age her eyes are said to have been inflamed from time to time, but the account given is so vague as to be extremely untrustworthy. Upon examination: V. = counting fingers at 0·5 metre. Conjunctiva normal. No redness of the eyes, photophobia, or lachrymation. The corneæ are milky, so that indications only of the underlying parts can be made out. The cloudiness, especially in the left eye (see figure 4) is unequal, and the epithelium is roughened—shaggy, as it were. As in the girl Ada so in this patient, there was no personal evidence of syphilis, although the girl was anæmic and unhealthy looking.

M Minnie, a nervous girl of unwholesome appearance, with her face badly disfigured from acne. Her eyes became affected at seven years, and sight has become progressively worse, but without any symptoms of irritation or inflammation and without any complaints of pain. Upon examination: V. = fingers at 0.5 metre and No. 16 Jaeger. The condition of the corneæ closely resembled that of Henrietta, but was not quite so pronounced. Figure 5 represents the state of the left cornea, and it will be seen from the illustration that the central parts were more affected than the peripheral. The anterior epithelium was irregular and slightly roughened. In the right cornea were several small clearer spots, looking something like tiny bubbles, the lowest one being distinctly elevated above the surface of the surrounding tissue. In the left cornea several similar spots existed in the lower third. Upon using a magnifying glass, a feltwork of lines could be recognised, especially in the central region of each cornea. No loss of sensation. Minnie presented no personal stigmata of hereditary syphilis.

Comments.—This remarkable family, then, presents in three generations, seven instances of a slowly progressive and bilateral degeneration of the cornea, leading to the serious impairment of sight after lasting for several years. As a rule, the condition was not accompanied by any very prominent symptoms of inflammation. Such as were present in two of the cases were probably the expression of tiny erosions of the corneal epithelium, rendered particularly vulnerable by degenerative changes. These epithelial defects might result from trivial, nay, inappreciable, injuries. The ages of the five patients actually examined by us—12, 15, 22, 24, and 48 years respectively—allow one to study the different stages in the evolution of a very singular malady. In no instance was any evidence of syphilis forthcoming. Indeed, to evoke syphilis as a cause would be to imply what has never yet been scientifically proved, *viz.*, the transmission of that disease to the third generation. Two of the patients belonging to the third generation looked unhealthy, but the thyroid gland, the state of which was investigated in every case, showed no obvious changes. No consanguinity of parents existed, either in the first or second generation.

Family degeneration of the cornea, although doubtless rare, is by no means unknown to systematic writers. It would, indeed, be a curious thing if so well-defined a condition had not attracted the attention and excited the interest of those under whose notice it fell. As a matter of fact, on the continent, instances have been described by Haab, Dimmer, Hauenschild, Fuchs, Freund, and Fehr; in France by Chevallereau; in the United States by Oliver and by Veasey; and in England by R. M. Gunn and by W. H. H. Spicer. It may not be altogether a

waste of time to glance at these cases, for the purpose of ascertaining how they compare with those described in the present communication.

Haab¹ reported cases of what he called "lattice-like" keratitis in a boy, aged 16 years, and in the latter's maternal aunt and uncle. F. Dimmer² gave particulars of three cases of superficial lattice-like opacity of the corneæ (*oberflächliche gitterige Hornhauttrübung*) which he had an opportunity of seeing in two brothers and a sister, aged respectively 55, 49, and 51 years, belonging to one family. The degenerative changes had reduced sight to a low degree. The patients were otherwise in good health. W. Hauenschild³ described two cases in father and grown-up daughter, and, according to a later note by Hess,⁴ a grand-daughter was also affected at five years of age. In the grown-up daughter the disease, most marked towards the centre of the cornea, where many raised grey points were connected with each other by raised greyish-white lines, had reduced sight to R. = $\frac{1}{4}$ and L. = $\frac{1}{3}$. The epithelium scarcely participated in the process. The affection dated from the earliest childhood, and syphilis, acquired or hereditary, could be excluded with certainty. The disease in these cases had therefore appeared in three generations. The most remarkable instance, however, was that reported by Heinrich Freund,⁵ of Reichenberg, in Bohemia, under the name of "lattice-like opacity of the cornea." That surgeon was able to refer to fifteen cases belonging to two families, the Bienert and the Herrman family, of which the former furnished seven and the latter eight patients. The cases were traced through four generations. The symptoms appeared first after puberty, and involved both eyes, although generally to an unequal degree. They included little dazzling, grey patches, and a lattice-like network in the cornea, and defective sight. Fehr⁶ met with three cases in two brothers and a sister, untainted by hereditary syphilis. The corneal mischief commenced at ten or twelve years of age, was not accompanied by signs of inflammation, and led to inability, partial or complete, to earn a livelihood after lasting for twenty-five to thirty years. The corneæ had a greyish colour, interspersed with white spots and patches, and, upon using a strong lens, the diffuse white thickening was seen to consist of fine dots. The densest opacities were situated towards the centre of the cornea. The surface of the cornea was even, smooth, and polished, a point upon which Fehr lays considerable stress as distinguishing his cases from most of those described by other authors. Fehr classed his cases under the name of "familial, patchy form of corneal degeneration."

In 1892 C. A. Oliver⁷ gave an account of a mother, aged 45 years, and her son, aged 8 years, both of whom presented toward

the central region of the corneæ a dense nucleus-like area, surrounded by a ring of superficial pin-dotted opacities. Symptoms of inflammation had never been present. The condition dated in the mother's case from childhood. It will thus be seen that Oliver's cases present some points of contrast with the others mentioned, but it is probable that, in reality, they belong to the same group. Clarence A. Veasey⁸ reports in a healthy brother and sister examples of "macular corneal degeneration," which he considers as identical with those described by Fehr. The patients were aged 41 and 43 years. The defect had lasted for upwards of thirty years, and had resulted in very defective sight (Jaeger No. 12 and No. 14 respectively). The corneæ were diffusely hazy, with many greyish-white maculæ here and there, especially towards the centre. As in Fehr's case, the surface of the corneæ was quite smooth. There were four other brothers and sisters in the family, but their eyes were free from morbid changes.

R. Marcus Gunn⁹ has given some details of a patient, aged 32 years, whose eyes had always been more or less sensitive to light. The corneæ were hazy, especially towards the centre, where roundish, raised spots were present. Twelve years after Gunn's first examination, sight had sunk from 20/40 to 10/200. The patient was one of a family of ten members, of whom four, including the patient himself, had eyes affected apparently in the same way. The disease was classed as (?) keratitis nodosa. It is probably nothing more than mere coincidence that two of Gunn's patients had suffered from severe acne of the face, while one of our patients (Minnie L——) was disfigured by the same disease. W. T. Holmes Spicer¹⁰ under the name of "nodular opacities," has recently given a rather meagre description of a girl, aged 23 years, whose sight was impaired by a number of grey spots lying in the anterior layers of the corneæ, mainly in the central region. Over a few of the larger nodules the corneal epithelium was a little raised. The father, aged about 50 years, manifested a similar condition. There was a history of defective sight, believed to be due to the same curious change, in the patient's paternal uncle and aunt.

The conditions described above, although they obviously present many features in common, have been catalogued under the several different names of "lattice-like," "nodular," "patchy," or "macular," "keratitis," or "degeneration." It seems clear, nevertheless, that apart from slight anatomical differences, the affection in its chief characteristics and clinical course has always been the same.

What is the connection, if any, between "family degeneration of the cornea," on the one hand, and "lattice-like" and "nodular" keratitis, on the other? This question may, perhaps,

be simplified if we glance very briefly at the clinical and pathological characteristics of the two affections named.

A. Grœnouw¹¹ of Breslau, appears to have been the first observer to describe the so-called "nodular" opacities of the cornea. They were met with as discrete, grey dots, not exceeding 0.25 mm. in diameter, occupying almost exclusively the central portion of the cornea. Since they lay in the superficial layers, they caused local elevations of the corneal epithelium, which in other respects was normal. They were of extremely slow development, and caused scarcely any symptoms beyond interference with sight. To complete the clinical picture it should be added that between the grey nodules lay smaller and much more numerous grey dots. A piece of cornea was excised from one patient, and examined microscopically. The nodules were found to be of hyaline nature, and there was no pathological evidence of inflammation. Cases described by Manz¹² and by Eversbuch¹³ may belong to the same category. Neznamow's¹⁴ case, also, may be essentially the same. Fuchs¹⁵ has recently investigated the disease, and has described its pathology in so far as he was able to learn it from a piece of cornea removed from one of his eight cases by the trephine. Briefly stated, these included œdema and mucoid degeneration of the upper lamellæ of the cornea, together with absence of Bowman's membrane. Other instances of nodular keratitis have been described by Chevallereau,¹⁶ R. W. Payne,¹⁷ Oscar Dodd,¹⁸ E. T. Collins,¹⁹ Kœrber,²⁰ and Deutschmann.²¹

"Lattice-like keratitis"—or *gittrige keratitis*, to employ the German equivalent—was first described by Hugo Biber,²² one of Professor Haab's pupils, in the year 1890. He gave details of three cases in unrelated patients—a woman and two men—aged respectively 39, 53, and 62 years, and characterised the disease as a chronic one producing bilateral corneal opacities, which at first glance looked as if they might be the residue of an interstitial keratitis. Upon closer examination, however, the opacity (which spared the marginal parts of the cornea) was found to be due to a lattice-like system of lines and fine rounded dots. The former at first resembled a bundle of twigs, and later a spider's web. The anterior epithelium was rugged. Symptoms of inflammation were insignificant, and at most included slight congestion of the eyeball, and a greater sensibility to light than usual. Photophobia and lacrymation were completely absent. The disease, after running a long and painless course, eventually led to serious impairment of sight.

Nine years later Haab¹ himself gave a lucid account of this curious affection, reporting four new cases, and at the same time completing the history of the three cases originally described by Biber. This form of corneal degeneration presents a close

resemblance to the nodular form, and differs from the last-named mainly in the fact that actual nodules are replaced by a system of delicate, greyish, forked and anastomosing lines, in the intervals between which lie numerous tiny, grey, punctate dots. Lines and dots lie in Bowman's membrane and in the deepest layers of the epithelium, and may be in the nature, as surmised by Haab and others, of a hyaline degenerative process. Haab rejects the view that the lines are in any way connected with the distribution of nerve fibres; neither does he believe that they represent fine vessels left by an attack of interstitial keratitis. At a later stage, when the process is more advanced, the likeness to a grating (whence the name "*gittrige*") is more pronounced, and the surface of the cornea then tends to become uneven. The opacities are more or less diffuse, a point likely to render diagnosis somewhat difficult.

Since the publications of Biber and of Haab, cases of "lattice-like keratitis" have been described by E. T. Collins²⁸ Fehr,²⁹ and by the authors mentioned in an earlier part of the present communication.

The two diseases, then, agree in several particulars—as, for example, that they begin at about the period of puberty; that they are accompanied by insignificant signs of inflammation; that they attack, at first, chiefly the central parts of the cornea; that they are slowly progressive; that they probably represent not an inflammatory but a degenerative process. Then, lastly, there is the fact that the sensitiveness of the cornea, particularly as regards the central region, may be impaired; and, finally, that both conditions tend to run in families, so to speak. In short, there is so close an analogy between the "nodular" and the "lattice-like" condition that it is difficult to avoid a suspicion that they are at root one and the same affection.

This conclusion is strengthened by the fact that must be obvious on reading over the account we have given of our own cases, namely, that in some the disease appeared to belong to the "lattice-like," and in others to the "nodular" variety. In two of the patients the corneal opacity recalled, as regards position, the well-known transverse calcareous film of elderly persons. At the same time it would be unreasonable to assume that the malady in its essential features differed in the various members of the L—— family. Again, the state of the corneal epithelium, upon which so much stress has been laid by Fehr, points to the same conclusion, since it was smooth in some of the cases and distinctly roughened in the others. But whether we call the cases "nodular" or "lattice-like," after all, inatters little. It will be enough if we characterise the condition described in this communication as an instance of "family degeneration of the cornea."

In conclusion, a word with regard to the peculiar fenestrated condition of the corneal cicatrix observed in cases Nos. 1 and 2, which, so far as we know, has not been described before. That it is not singular to degenerative changes in the cornea, but may also be found in inflammatory conditions, is shown by the following case:—

James P———, age 16 years, had suffered for about eighteen months from bilateral keratitis, due to hereditary syphilis, of which he presented several evidences. That disease had entailed two more or less triangular leucomata, one situated in the lower part of each cornea. The rest of the cornea was pervaded by the fine, deep vessels, upon which Hirschberg²⁵ has laid stress as a more or less permanent sign of an antecedent keratitis. One of the leucomata showed upon naked-eye inspection a small, oval area towards its middle part. The area looked black, and contrasted sharply with the surrounding grey leucoma. Upon close examination with the ophthalmoscope mirror and a convex (20 D.) lens, a reddish reflex from the fundus could be obtained through the region in question. The conclusion was accordingly inevitable that it represented a clear spot in the cornea.

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UNILATERAL PROPTOSIS AND ŒDEMA OF THE LIDS (?) THROMBOSIS OF THE CAVERNOUS SINUS) OCCURRING IN THE COURSE OF SCARLATINA

BY

LOUIS WERNER, M.B.,

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The patient, a boy aged six years, after two days of malaise developed a mild attack of scarlatina, with only slight affection of the throat. He made very good progress up to the ninth day, when the temperature, which had been normal for two days, rose to 101.4° F., and he became heavy and drowsy. The eyelids of the right eye were swollen and red, and the eye itself became prominent. There was no congestion of the conjunctiva. The temperature returned to normal in a few days, but the eye symptoms persisted, although to some extent improved. Dr. John Murphy, who had charge of the case, and who kindly furnished me with the particulars just mentioned, then asked me to see the boy. On examination, there was a bright-red blush over the upper lid only; both lids were swollen and œdematous, more especially the upper one. The swelling was not tense or indurated, and the boy was able to keep the eye open. No enlarged veins were visible, but the lower eyelid was slightly blueish. The exophthalmos was very evident; cornea clear, pupil normal in size and reaction. No impairment of mobility beyond what might be expected as the result of the protrusion. There did not appear to be any pain or tenderness. Unfortunately I was unable to examine him ophthalmoscopically until a few days later, when a further improvement had taken place, and then I found the fundus quite normal. The local treatment consisted merely of warm fomentations of boric lotion, with a mild astringent. For some weeks after the boy had recovered from the scarlatina, a slight degree of swelling of the lids occurred at variable intervals. It then disappeared, but the proptosis persisted for two months. When last seen the eye was perfect, and all traces of the exophthalmos had vanished. I should add that he never had any aural trouble or albuminuria.

Remarks.—Orbital complications are exceedingly rare in scarlatina. In the new edition of *Græfe and Sæmisch* (Bd. XI., C. XXII., p. 545), it is stated that a few cases of orbital cellulitis with proptosis of the eye have been observed. A case of periostitis is also referred to, but beyond this, no further information is given on the subject. Dr. J. Marshall Day, who has been resident medical superintendent of the Fever Hospital in Dublin for the past twenty years, informed me

that he had seen only two such cases, and kindly gave me the following details of one of them :— A strong, healthy-looking girl, aged 14 years, developed scarlatina of a severe type, with diphtheria of the throat, and profuse nasal discharge. The temperature was “spiky,” rising to 104° F. at night, and falling to 99° F. in the morning. The disease ran a severe course for eight days and then the throat improved, but the following day there was slight laryngeal paralysis, and four days later, double otorrhœa. At the end of a week, the left side of the face and lower eyelid became swollen. Next day the swelling of the face had diminished, but the upper eyelid had become involved and there was evident protrusion of the eyeball, with great tenderness over the frontal bone. The pupil was normal and reacted well. The discharge from the ears continued to be very profuse, thick, and purulent. An abscess formed in the upper lid and opened above the outer canthus. The girl eventually recovered with perfect sight, and a very slight scar. In the second case (the notes of which could not be found) the disease terminated fatally. The patient was a girl, aged 5 years. She also had diphtheria.

In the *British Medical Journal* (January, 1895), Sidney Phillips, of the London Fever Hospital, records three cases of unilateral œdema of the eyelids in scarlatina. The œdema, which was associated, as in Dr. Day's cases, with otitis media, improved concurrently with the latter. In one of the patients an abscess formed, but they all recovered. It is a curious fact, but it may be merely a coincidence, that in two of Phillips's cases and in the first case described in this paper, the orbital affection appeared about the ninth day of the disease.

Phillips attributed the orbital complication to thrombosis of the cavernous sinus, and I think this diagnosis is more likely to be correct in my case than that of a metastatic cellulitis occurring independently of thrombosis. It might naturally be expected that secondary thrombosis would occasionally follow otitis media, which is a common complication of scarlatina, but primary thrombosis, although much rarer, may also occur. Gowers (*Diseases of Nervous System*, Vol. II) states that primary thrombosis, of the cerebral sinuses is most frequently met with in children, after any prostrating malady, including specific fevers, but that it occurs more commonly in the superior longitudinal sinus than in the lateral or cavernous sinuses. I may remark that the boy was very anæmic and debilitated after the attack, although he was up and about. The interesting points in the case seem to be the absence of otitis media; the complete recovery without suppuration; and the long duration of the proptosis after the subsidence of the acute symptoms.

CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

THE GROSS APPEARANCES OF THE TISSUES OF THE IRIS IN EPILEPSY.*

BY

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THE material for these studies was obtained from the nervous wards of the Philadelphia Hospital. The work was done mostly during the writers' last three months of service, in the ophthalmic wards of the Institution (January, February, and March of last year, 1904).

Every case was submitted to a critical ophthalmic examination, in order that all local ocular disease might be excluded. Nearly 60 subjects, males as a rule, and preferably native-born American adults, were used. Each eye was examined in every relevant detail. Notes of all of the findings were taken at the time, and later compiled as a whole without any regard to the character of the results. Diffuse daylight was concentrated upon the magnified tissues of the membrane in such a way that thorough study could be made of every exposed portion.

As a result it was found:—

First, that the pupils, like those of normal individuals, were oval or ovoid with the angles of their long axes placed slightly downward and outward.

Second, the pupils, as a rule, were unequal in size, that of the left eye being generally the larger.†

Third, the pupillary rims of the pupillary zones presented unusual degrees of uveal pigment fringing.

Fourth, the muscle areas of the pupillary zones were, as a whole, rather deeply tinted, and the composite fibres appeared to be slightly thickened.

Fifth, the divisional minor circles were not distinctly outlined, their interlacings and crypts in most instances not being sharply and clearly defined.

Sixth, the radiary fibres of the ciliary zone were plainly

*Vide *Philadelphia Hospital Reports*, Vol. VI.

†The writer's attention was first attracted to this subject several years ago while reading Dr. William Browning's positive findings in his most interesting article upon "Inequality of the Pupils in Epileptics, with a note on Latent Anisocoria," which appeared in the *Journal of Nervous and Mental Disease* for January, 1892 (p. 17).

marked and outlined, although the intervening minute depressions were blurred and indistinct in some places.

Seventh, the concentric contraction grooves in the ciliary zones were abruptly broken in places, with a lessening of the indentation depths, and an undue broadening and elevation of the corresponding furrow ridges.

Eighth, the vascular spots and pigment aggregations ordinarily seen in the ciliary zone were probably increased in number and size.

Ninth, the peripheral pigment in the generally invisible ciliary rim of the ciliary zone, was sufficiently broadened in some situations in some of the cases that it could be seen under oblique illumination.

A NOTE ON THE TREATMENT OF SIMPLE GLAUCOMA.

BY

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DR. G. A. BERRY, in his "Remarks on the Nature and Diagnosis of Glaucoma," a paper read before the Section of Ophthalmology at the recent (1904) Annual Meeting of the British Medical Association, is reported to have said, when speaking of simple glaucoma, that in his experience the use of myotics was useless; that he had never seen sclerotomy do much good; and that he had given up the performance of small iridectomies. The first two of these statements taken in the abstract would seem to require some qualification. Still, all three of them are suggestive, and, coming, as they do, from an authority of such large experience, they must carry considerable weight. Speaking generally on the treatment of simple glaucoma, one would feel inclined to say that all treatment is, for the most part, comparatively useless. Yet, anyone who has seen much of this distressing disease can recall certain cases in which treatment, when commenced early enough, has resulted in lasting good. I have in my mind at this moment the history of a patient—a woman of 60 years—in which the use of myotics in one eye and iridectomy in the other has apparently arrested the disease. When first seen, some eight years ago, the visual acuity had fallen to $\frac{6}{12}$ (partly) and $\frac{6}{36}$. There was marked contraction of the fields with a tendency to sector-like contraction on the nasal quadrants, and there was increase of

tension, etc. Iridectomy was done on the left—the worst—eye, and the right eye was treated by myotics only. The present condition of the eyes is as follows: Vision, R. = $\frac{6}{6}$; L. $\frac{6}{12}$ partly; the fields are nearly normal for all colours; and the tension is normal also. The iridectomy was a small 5 mm. coloboma, and as peripheral as it was possible to make it. For several years I have aimed at making the coloboma narrow, from 4–5 mm., and at the same time as peripheral as possible. This narrow iridectomy has the advantage of making the patient's vision more comfortable than the orthodox wide-based coloboma, seeing that it reduces the dispersion of rays to a minimum, and, moreover, the cosmetic effect is much more pleasing. It is now generally admitted that of operations iridectomy is the most effective, but I think there are some cases in which sclerotomy is an equally effective, if not a better, procedure. I can recall a case in which an iridectomy did not seem to produce any effect on the tension. A sclerotomy was done afterwards, and this operative sequence succeeded in arresting the disease.

Mr. W. A. Brailey, in the same discussion, dwells upon the necessity of guarding against eserine irritation, and my old teacher, Professor Hirschberg, repeated the opinion which he has always held and taught in his *clinique*, namely, that the irritation following the use of eserine and atropine is due to septic solutions. This opinion I was inclined to consider not altogether correct until some six years ago when I was able to make a clinical observation in the prolonged use of eserine for a case of simple glaucoma. For two years this patient had been using a solution of eserine sulphate in distilled water, and all at once the drops began to cause excessive irritation and a solution of pilocarpine (which, by the way, is much inferior to eserine as a myotic) was substituted. About this time I came to know of the salicylate of eserine, of which I got some from Merck, of Darmstadt. This solution the patient in question has been using four times a day continuously ever since, and it causes no discomfort. More recently still, instead of water I have employed a solution of chloreton as the vehicle with the happiest results. Eserine irritation is now unknown in my practice. A solution of trikresol, 1:1000, is also a good vehicle for eserine, atropine, homatropine, cocaine, etc. This and the solution of chloreton (1 %) not only make the drops which we use in our eye practice aseptic, but they also act as preservatives and thus the necessity of sterilising these fluids by boiling is done away with. This latter is a most decided advantage, as we know that boiling a solution of some of these drugs, by causing some kind of chemical decomposition, very materially lessens their potency. I am in hopes, therefore,

that we shall have no more trouble from this kind of conjunctival irritation and that its occurrence following the use of eserine, atropine, homatropine, and cocaine, will now be a thing of the past. I have not included holocain in this group, because it has antiseptic properties of its own, and therefore may be dispensed with pure sterilised water alone.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—PATHOLOGY.

(Second Notice.)

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- (1) Bull, Charles Stedman.—Arterio-sclerosis and its bearing upon certain lesions of the retina and optic nerves. *Annals of Ophthalmology*, Vol. XIII, No. 1, January, 1904.
 - (2) Shears and Stockdale.—Melano-Sarcoma of the choroid. *Liverpool Med. and Chir. Journal*, January, 1904.
 - (3) Gamble, W. E.—A contribution to the study of visual disturbances in brain injury. *Journal of the American Medical Association*, Vol. XLII, No. 4, 23rd January, 1904.
 - (4) Gonin, J.—A subconjunctival angiofibroma of the external rectus, with hyaline degeneration. *Archives of Ophthalmology*, March, 1904.
 - (5) Zeller, Otto.—On cysts of the skin of the eyelids. (Zur Kasuistik der Cysten der Lidhaut.) *Klin. Monatsbl. f. Augenheilkunde*, Mai, 1904.
 - (6) Pascheff, C.—A contribution to the study of ocular tumours. (Contribution à l'étude des tumeurs de l'œil.) *La Clinique ophtalmologique*, 10 mai, 1904.
 - (7) Oatman, E. L.—Etiology and pathology of corneal cysts, with report of a case. *Archives of Ophthalmology*, May, 1904.
 - (8) Verhoeff, F. H.—Sarcoma of the choroid with destructive hæmorrhage. *Archives of Ophthalmology*, May, 1904.
 - (9) Ewing, Arthur E.—Bullous keratitis : fatty degeneration of Bowman's membrane. *American Journal of Ophthalmology*, June, 1904.

- (10) Coats, George.—Thrombosis of the central vein of the retina. *Royal Lond. Ophth. Hosp. Reports*, Vol. XVI, Pt. 1.
- (11) Moissonnier.—Orbital cylindroma : relapse : anatomico-pathological study. (Cylindrome orbitaire : récidence : étude anatomo-pathologique.) *Archives d'ophtalmologie*, juin, 1904, p. 388, and *Bull. et Mém. de la Soc. française d'Ophtalmologie*, 1904, p. 450.
- (12) Hunald, G.—Clinical and histological report on the injury caused to the cornea by the sting of the bee. (Klinische und histologische Befunde bei Verletzung der Cornea durch Bienenstiche.) *Von Graefe's Archiv f. Ophthalmologie*, Bd. 59, i., 9 August, 1904.
- (13) Alt, Adolph.—Remarks on glioma of the retina and the question of rosettes. *American Journal of Ophthalmology*, September, 1904.

(1) In this paper the ophthalmoscopic changes which characterise endovasculitis are briefly reviewed, and the observations of Raehlmann upon the pathological and clinical differences between sclerosis of the adventitia and of the intima, and upon the resemblance between closure of the lumen of a vessel by embolus or thrombus, and the same conditions due to endarteritis obliterans nodosa are referred to.

Bull calls special attention to atrophy of the optic nerve resulting from arterio-sclerosis. Otto, among others (*Archiv für Augenheilkunde*, Bd. 43, 1901), he says, describes cases of circumscribed atrophy caused by sclerosis of the internal carotid and ophthalmic arteries, the localized dilatation and hardening of the walls of the vessels exerting a mechanical pressure upon the nerve. From the clinical standpoint, the author tells us we know but little about the effects of the arterio-sclerosis upon the optic nerve : we see cases of absolute central scotoma without ophthalmoscopic changes ; para-central scotoma and other defects of the visual field with perfect visual acuity. He asks if under these conditions, it is not justifiable to assume, when all possible causes save arterio-sclerosis are absent, that the latter is the cause of the defect. He is also strongly disposed to regard many of the cases of so-called simple chronic glaucoma as those of atrophy of the optic nerve due to sclerosis of internal carotid, ophthalmic, or anterior cerebral artery, which by pressure on the optic nerve posterior to the optic foramen, has caused descending atrophy. For some years he has been convinced that sclerosis of the ophthalmic and internal carotid arteries may affect the optic nerve more than has hitherto been suspected, although so far he has been unable to confirm the

theory by autopsy. The pressure, he says, may occur in the prolongation backward of the long optic canal toward the skull, where the ophthalmic artery often enters the optic nerve tissue in a longitudinal direction, or it may be at the border of the fibrous optic canal in which situation the optic nerve is pressed upon by the ascending carotid artery—or even between the fibrous canal and the chiasma, at which place the carotid and anterior cerebral arteries cross above and below the optic nerve. Wherever there is pressure, the result is a pure pressure atrophy.

F. W. MARLOW.

(2) The specimen shown by **Shears** and **Stockdale** had nothing unusual in its appearance.

(3) **Gamble's** case was one of bullet wound of the left temple, one and one-half inches behind the eye, and one-half of an inch above the zygoma. After consciousness had returned, the patient could not recognise familiar objects, such as pictures and streets, or determine localities. He was unable to name letters or to count. For example, neither touch, taste, nor smell of cigars would bring the name to his mind.

At the end of one year's time, there was right homonymous hemianopsia without hemianopic pupillary reaction sign. The optic discs were slightly pale. There was partial right hemiplegia. The patient experienced difficulty in remembering proper names. Radiographs showed the presence of a bullet in the left occipital lobe. After three years' time, the hemianæsthesia and hemiplegia had gone: the hemianopsia remain unchanged. Vision was normal in each eye. There was amnesic colour-blindness. The patient, who was a house painter, responded to Holmgren's test perfectly.

With the assistance of Dr. Eckler, Professor of Anatomy in the University of Illinois, the line of transit in the brain tissue traversed by the bullet was duplicated upon a *cadaver*. The report of this investigation does not permit of condensation. The conclusions suggested by the investigators, however, are as follows:—

1. A cortical lesion of the size of a thirty-two calibre bullet involving the third and the fourth left temporal convolutions with a bruising of the anterior end of inferior occipital convolutions at the same level produces verbal amnesia with pure word blindness.

2. Amnesic colour-blindness and alexia result from lesions in the left middle occipital convolutions.

3. Re-acquirement of function at the age of twenty-eight years is a slow progress of education of the right hemisphere, requiring years.

4. Injury to the optic radiations of Gratiolet may produce negative colour scotomata.

5. Primary atrophy of the optic discs occurs in lesions of the left temporo-occipital lobe. F. W. MARLOW.

(4) A man, aged 22 years, complained of a swelling near the outer canthus of the right eye. There had been no trauma ; the growth was not congenital. The clinical picture corresponded closely with that of an ordinary lipoma. The tumour lay under the ocular conjunctiva, which was marbled with distended vessels. The growth had about the size and shape of an almond. During an operation for removal of the growth, the latter was found to be intimately attached to the external rectus muscle, so that the tendon had to be buttonholed before the growth could be got away. The patient made a good recovery. *Microscopical examination*.—The tumour was made up of rather thick connective tissue traversed by clear bands, each of which contained in its midst a vessel or capillary. Eosin and van Gieson's stain gave beautiful results. It was therefore an instance of simple hyaline degeneration of the vessel walls. Here and there were small deposits of fat. No muscular tissue could be recognised. The conjunctiva was normal.

(5) **Zeller** describes the microscopical appearances of a couple of serous cysts removed from the lower lids of an elderly woman. He regards them as retention cysts, either of Moll's glands or of the sudoriferous glands of the skin of the eyelids.

S. S.

(6) **Pascheff** gives an account of various tumours seen during five years. The following is a list of them :—

(1) *Alveolar Melanotic Sarcoma of the Palpebral Conjunctiva*.—The tumour was excised with a portion of the tarsus. Morbid anatomy described.

(2) *Limbo-corneal Papilloma*.—Mushroom-like growth with cauliflower surface, springing from limbus and covering the cornea. Complete extirpation of the growth ; patient had not appeared again during two years. Morbid anatomy described, and compared with that of other cases.

(3) *Traumatic Mesoblastic Serous Cyst of the Iris*.—A girl, 8 years, history of eye injury three years ago with a small knife, developed a transparent cyst of the iris, which by its lower part filled the iridic angle. Iridectomy with removal of collapsed cyst : two relapses in one year. Morbid anatomy described, and pathogenesis discussed.

(4) *Hydatid Serous Cyst of the Orbit*.—Man aged 60 years, fond of dogs. Mist appeared before eye, pains in eye and head,

proptosis with restricted motion in all directions, increased retro-bulbar tension, choked disc : exploration of cavity of orbit *via* the conjunctiva, puncture of the retro-ocular swelling, withdrawal of a clear fluid containing sodium chloride, but no albumin. The swelling recurred ; 3 grammes of a yellowish, less transparent liquid withdrawn ; it contained a little albumin, no hooklets, no epithelial cells, much sodium chloride. These withdrawals of fluid resulted in cure. A year afterwards there was no relapse. Vision improved from fingers at 40 cm. to $\frac{6}{18}$. The pathogenesis is discussed.

A bibliography is appended to each of the cases.

ERNEST THOMSON.

(7) A man, twenty-five years of age, presented himself on account of what appeared to be a highly staphylomatous eye. Four years previously an extensive laceration of his left globe had terminated in phthisis bulbi. Less than one-half the cornea remained, and there was only light-perception. On further inspection, the apparent staphyloma was decided to be a thick-walled, multilocular cyst, situated in the sub-conjunctival tissue and the remains of the cornea. Sulci subdivided the cyst, following the cicatrices of the original injury, and also marking the division between the conjunctival and corneal regions. The large blood vessels were confined chiefly to the conjunctival portion. Half a drachm of fluid withdrawn was thin, yellowish, and alkaline, and contained 5 per cent. of albumen. The microscope showed endothelial cells, cellular *débris*, and fat and large fatty cells resembling Gluge's corpuscles. A small portion of the thick anterior wall was excised from the corneal part of the cyst, the remaining fluid was exhausted by means of a probe, and the staphyloma disappeared. No communication between the interior of the eye and the cyst was discovered. Tension was not affected. The patient returned in three days. There was no inflammatory reaction, and as the annoyance incident to excessive staphyloma had disappeared, enucleation was refused. **Oatman** believes the cyst to have been permanently cured.

Microscopic examination of the corneal specimen, revealed a series of irregular cavities separated by connective tissue trabeculæ, the walls being lined with scattered endothelioid cells. Many cavities were empty ; others contained granular or colloid matter, endothelial cells, and cellular *débris*. Elastic tissue could not be demonstrated. The diagnosis was Lymphangiectasia cavernosa of the conjunctiva and cornea.

In the *résumé*, attention is called to the fact that the two principal forms of corneal cysts are epithelial and lymphatic, the former being the more frequent. Exception is taken to the

view that cysts develop from surface epithelium accidentally detached or implanted in corneal wounds, and that lymphatic cysts are caused by an obstruction of the lymph currents, and the following reasons are given: (a) the structure of the cornea is sufficiently dense to prevent any great distension of its lymph space from obstruction; (b) the extensive efferent system of the corneal lymph spaces provide against any local obstruction; (c) atrophy of the lamellæ always precedes cystic dilatation of the spaces; (d) the atrophy may be ascribed to pathological changes in the pericorneal capillary system; and (e) the irritation of the altered lymph on the naked connective tissue of the lamellæ probably produces a proliferation of endothelioid cells.

JOSEPHINE W. HILDRUP.

(8) The literature seems to show that hæmorrhages are either rare or else are overlooked in choroidal sarcoma. That they can occur is demonstrated by the three following cases: *Case I.*—Melanotic spindle-cell sarcoma of the choroid. Wide-spread necrosis of tumour. Destructive intraocular hæmorrhage. Purulent infiltration of the cornea. *Case II.*—Spindle-cell leuco-sarcoma of choroid. Necrosis of tumour. Expulsive intraocular hæmorrhage. Purulent infiltration and spontaneous rupture of the cornea. *Case III.*—Melanotic round-cell sarcoma of the choroid. Expulsive intraocular hæmorrhage. Purulent infiltration and spontaneous rupture of the cornea. In the first case the source of the hæmorrhage was the anterior portion of the necrotic tumour, the blood having broken through the capsule. The cornea was so infiltrated with pus cells that, had the eye not been enucleated, it must have ruptured in a short time. In the second case, the hyaline necrosis of the iris; the purulent exudation from the choroid; and the fact that the posterior layers of the cornea were more necrotic than the anterior, showed that a hæmorrhage occurred in the globe before the rupture of the cornea took place. The source of the hæmorrhage in this case, too, the author deems himself justified in concluding, could have been nothing else than the large area of necrosis in the tumour, the hæmorrhage of the choroid being secondary to the rupture. In the third case, the posterior layers of the cornea were more necrosed than the anterior, denoting pressure from behind. No bacteria could be demonstrated in the cornea, although various methods of staining were tried. An extensive portion of the choroid was not disorganised by hæmorrhage, but was densely infiltrated with pus cells. Sections stained for iron showed that the pigment epithelium of the retina and pars ciliaris retinæ contained large quantities of that metal.

Out of a total of 243 unsettled cases of choroidal sarcoma, only one more case of destructive hæmorrhage was found, and none other reported. **Verhoeff** is inclined to consider that, while this would seem to prove such cases rare, some are overlooked. They could easily be mistaken for cases of hæmorrhagic glaucoma; glaucoma from hæmorrhage; or, when seen in a late stage, for primary ulcerative keratitis. After enucleation, the tumour might escape notice in the mass of blood filling the globe. Even aside from destructive hæmorrhages, little or no attention seems to have been paid to the subject of hæmorrhage in connection with choroidal sarcomata. It is hardly to be doubted, the author believes, that hæmorrhage can be responsible for the sudden attacks of glaucoma in many sarcoma cases. In rare cases hæmorrhage takes place from the atrophied choroid, iris, or ciliary body; and, in this connection, attention is called to the probability that some of the cases of choroidal sarcoma with phthisis bulbi are due to the organisation of blood clots in the vitreous chamber.

JOSEPHINE W. HILDRUP.

(9) After reference to the observations of von Graefe, Schweigger, Saemisch, Leber, Fuchs, and others upon the pathology of this affection, **Ewing** records a case to which he adds a detailed account of the microscopic examinations and ten illustrations. Vision of the affected eye began to fail in the year 1887, vision at that time equalling 15/96, without ophthalmoscopic change. Eight years later, the eye was blind, hard, and painful, necessitating removal. It was found that the iris was united to the lens and the cornea by a membranous vascular network. The upper and lower part of Descemet's membrane was denuded of endothelium in spots, but over the pupillary area the cells were increased in thickness. There were some dilated interlamellar spaces among the central and anterior layers of the substantia propria. Bowman's membrane had been destroyed in several spots, the gaps being filled by layers of fibrous tissue, which varied in thickness, and which were somewhat vascular. Near the centre, the membrane was found to be undergoing fatty degeneration. The epithelium over the cornea, except for an area of one-half of a millimeter near its centre, was continuous. In many situations it was thickened and elevated from Bowman's membrane. These changes, he states, seemed to indicate that bullous keratitis of advanced glaucoma is a form of necrosis of the anterior limiting membrane, in the destruction of which the epithelium is forced to take a part. Ewing's specimens exhibit vesicles in an incipient stage; fatty degeneration of Bowman's membrane; and the appearance of fibrin with the wandering and spindle cells in

the vessels from which a new basal membrane, which is sometimes vascular, develops—leading, the author says, to a regeneration of the affected tissues. Nowhere was any marked fatty degeneration of the epithelial cells to be found.

F. W. MARLOW.

(10) **Coats'** paper is the result of the pathological examination of four cases showing this condition. A table is given in which 19 cases that have been previously published are set out. The following pathological conditions have been put forward in order to explain the clinical pictures of thrombosis: (1) Thrombus in the central vein; (2) Multiple thrombi in the retinal veins; (3) Occlusion of the vein by proliferation of the intima; (4) Multiple emboli or perhaps thrombi of the retinal arteries; (5) Changes leading to thickening of the retinal vessels; (6) Hæmorrhage into the substance of the optic nerve. Whether all these conditions may produce the clinical picture of thrombosis, or whether there is any one condition always present, cannot yet be said to be proved. In so many cases the initial lesion occurred long before the eye was excised, and it is then difficult to distinguish between primary and secondary changes. Glaucoma, which so frequently complicates the condition, leads to very grave sources of error. Transverse serial sections of the eye, and more especially of the disc and lamina cribrosa, should be cut. The four cases the author has examined are then described in detail. Of these 4 cases, 3 at least showed evidence that there really had been a thrombus to account for the symptoms, and although in the other case there was evidence that a thrombus had occurred in it, yet there was some doubt, owing to the fact that the eye had been bisected longitudinally.

Chief among the causes is angiosclerosis, and this is present in most of the cases. Valvular heart disease causes it in some cases, and details are given of one where this happened.

Among strictly local conditions that are favourable to the development of the condition is an unusually tortuous condition of the vein. There, however, still remain cases that are not easily explained, especially those occurring in young subjects where none of the usual conditions are present. When glaucoma is present it must be held to be a direct consequence of the retinal affection. An alteration of the lymph circulation may explain the onset of the glaucoma but it will not explain its continuance, though it may have something to do with it. The pathological condition found in the vessels of the eyes examined by the author are then described in detail and illustrated by several photographs of the actual sections.

C. D. M.

(11) **Moissonnier** describes the histological appearances of a relapsing tumour of the orbit. It consisted of epithelial elements, alveolar connective tissue, and a capsule of connective tissue. The author classed the growth as a cylindroma or as a glandular epithelioma. H. DE V.

(12) This kind of injury is exceedingly rare. **Hunald** has observed one case in a man and has followed it up by a long series of experiments on rabbits to elucidate the rather interesting pathology of the affection. The primary symptoms consist of ulceration of the cornea, which is often seen to contain the broken-off sting; corneal folds radiating from the wound; hypopyon; and a curious affection of the lens, closely resembling anterior polar cataract. The lens is only affected if the sting perforates the cornea, but perforation of the anterior capsule is by no means essential, and, as a matter of fact, is of but rare occurrence. The affection of cornea and lens generally improves to some extent. Hunald assumes that the cataract is due to the toxic action of the poison, causing degeneration of the capsular epithelium, intrusion of fluid between capsule and fibres, with consecutive degeneration of the latter, followed by partial absorption and regeneration. R. GRUBER.

(13) **Alt** contributes a paper discussing in detail the pathological anatomy of glioma, especially in relation to the formation of rosettes, which he regards as mere accidents of growth. The article is elaborately illustrated with photomicrographs.

F. W. MARLOW.

II.—PURULENT MENINGITIS AFTER ENUCLEATION.

Enslin, Eduard and Kuwahara, Y.—Upon purulent meningitis following enucleation of the eye. (Eitrigle Meningitis als Folge von Enucleatio Bulbi.) *Archiv für Augenheilkunde*, September, 1904.

That suppurating eyeballs should not be enucleated on account of the risk of meningitis is a view dating from 1863, when von Graefe (*Klin. Monatsbl.*, 1863, p. 456) reported two fatal cases. Similar cases were adduced by Mannhardt and Horner (*ibidem*), and von Graefe added a strong warning against operation under such circumstances. In 1885 Brückner-Deutschmann (*Arch. f. Ophth.*, 1885, IV, p. 251) collecte

twenty-six cases from the literature. In the year 1884 Alfred Graefe (*Tageblatt d. Naturforscher-Vers. Magdeburg*, 1884, p. 112) proposed to replace enucleation in panophthalmitis by evisceration of the eyeball. At about the same time Mules introduced his well-known operation [*Trans. Ophthal. Society*, Vol. V. (1885), p. 200]. Other views did not fail to find expression to the effect that panophthalmitis furnished, as it were, a direct indication for excision. In 1900 at the International Medical Congress at Paris, however, where the question was discussed, scarcely a voice was raised in favour of enucleation.

Enslin and Kuwahara report the following case :

A woman, aged 64 years, was seen on October 19th, 1903. According to the history given, the patient had injured her right eye on September 18th, 1902, whilst cutting grass, an accident followed by an ulcer of the cornea. The ulcer perforated and the result was a partial staphyloma, and complete blindness of the injured eye. The eye at a later stage became painful and subject to relapsing inflammation. The eye was enucleated on October 21st, but during the operation difficulty was experienced owing to adhesions that had formed between the conjunctiva and the sclera, and, what was worse, the globe was cut, with some escape of its purulent contents, between the equator and the limbus. The operation was followed by severe hemorrhage. The wound was washed with sublimate; sutures were not introduced. About twenty-four hours after operation the pulse was 160 per minute, full, and soft; clonic convulsions supervened; and the patient became comatose. The operation wound then appeared to be normal. (Edema of the lungs came on, and the woman died fifty-eight hours after the enucleation. Briefly, the autopsy revealed diffuse purulent infiltration of the meninges, bronchitis, broncho-pneumonia, and fatty liver. Pus was not found in the right orbit, petrous bone, or frontal sinus. The enucleated eyeball, the contents of the right orbit, and the corresponding optic nerve were fixed in Zenker's fluid. The parts were cut and stained for the microscope. The right eye measured 17 mm. by 20 mm. by 19 mm. The button-hole (2 mm. to 3 mm. in diameter) made during the operation, was found to lie in the upper part of the globe in the line connecting the equator with the limbus. Iris, ciliary body, and choroid showed evidences of violent inflammation. The retina was detached, and practically disorganised. The vitreous humour was replaced by nearly pure pus. Not a remnant of the lens could be found. The shrunken optic nerve was the seat of chronic inflammation. The orbital portion of the optic nerve showed leucocytic infiltration, thickening of the connective tissue septa, new formation of vessels, and atrophy of the nervous bundles. The central vessels, apart from thickening of the adventitia, showed no particular changes. The intersheath space was markedly distended with closely-packed pus cells. Here and there the dural sheath presented a small cell infiltration. The orbital fat, also, was infiltrated with wandering cells. The orbital nerves and muscles manifested no lesions. A morsel of the hemisphere of the brain, examined histologically, showed evidences of an acute purulent leptomeningitis associated with slight cedema. During life, a pure culture of streptococci was obtained from the orbit. After death, impure cultures of the same micro-organism were obtained from the vitreous, the pial sheath, and the membranes of the brain.

The foregoing case, then, goes to prove that an infection may be present, even although the orbital tissues, when examined with the naked eye, show no evidences of inflammation.

The remainder of Enslin and Kuwahara's paper is occupied with a discussion of enucleation and its substitutes, more especially in cases of panophthalmitis. Enucleation, as the authors point out, is essential in tumours of the eye and orbit. Meningitis under such conditions implies imperfect asepsis during operation. Other diseases in which enucleation is called

for are impending or actual sympathetic ophthalmitis, painful absolute glaucoma, ectasiæ bulbi, and intractable intraocular hæmorrhages. As regards threatened sympathetic ophthalmitis, the operations of optico-ciliary neurotomy or neurectomy and evisceration are less certain in their result. In extensive wounds of the eye with loss of sight, evisceration is as good as enucleation. What is the best operation in panophthalmitis? The authors believe that under these circumstances enucleation is contra-indicated, whether the sclera has or has not perforated. One fact is certain, namely, that almost without exception meningitis is brought about by infection of the freshly-made wound by pus escaping from the eyeball. As there is always a possibility of perforating the eyeball with the scissors in these cases, one can never be certain of operating aseptically. That many suppurating eyeballs have been removed without mishap cannot be allowed to weigh against this view. Evisceration is an excellent substitute for enucleation, provided we can be certain that perforation of the sclera has not taken place. It is certainly not so dangerous as enucleation. Bocci's case (*Archiv. di Ottalm.*, 1896, Vol., IV, p. 104) is the only one recorded where meningitis has followed evisceration, although upwards of forty are known to have succeeded enucleation. Schuleck's two cases, where patients died within the first week after exenteration, may be put aside, because nothing has been published about them, and they were simply mentioned by word of mouth to Becker (*Festschrift Heidelberg*, 1888, p. 73), and the same remark applies also to a case of Alfieri mentioned by Walther (*Diss. Erlangen*, 1903). On the other hand, evisceration is contra-indicated when perforation has occurred, because the necessary manipulations may then rupture any adhesions that until the operation may have sufficed to prevent the spread of pus from the eyeball into the orbit. After all, in panophthalmitis operation is undertaken for one of two reasons: first, to spare the patient pain and suffering, or, secondly, to shorten the course of a tedious affection. The dangers of sympathetic ophthalmitis are so remote as to be scarcely worth considering. Now if perforation occurs, the pain is usually at once relieved. To eviscerate under those circumstances would not imply any great advantage, inasmuch as the operation in question takes some time to be recovered from. Enslin and Kuwahara believe that when perforation into Tenon's space has taken place, conservative treatment is the best, although they admit that even then death may ensue in very rare instances.

S. S.

III.—TREATMENT,

(Third Notice.)

- (1) Reumaux.—Ichthyol and thigénol in the treatment of blepharitis. (De l'Ichthyol et du thigénol dans le traitement des blépharites.) *La Clinique Ophthalmologique*, 10 mai, 1904.
- (2) Elschnig, D. A.—Subcutaneous injections of physiological salt solution in amblyopia due to loss of blood. (Des injections sous-cutanées d'eau salée (solution physiologique) dans l'amblyopia par pertes de sang.) *La Clinique Ophthalmologique*, 25 mai, 1904.
- (3) Menacho.—The subconjunctival injection of iodipin. (Inyecciones subconjuntivales de yodipina.) *Arch. de Oftal. Hispano-Americanos*, Junio, 1904.
- (4) Blanco, Tomas.—The subconjunctival injection of irido-tonics. (Inyecciones subconjuntivales iridotonicas.) *Arch. de Oftal. Hispano-Americanos*, Junio, 1904.
- (5) De Wecker, L.—The reverse of a medal awarded to jequiritol and its serum. (Le revers d'une médaille décernée au jéquiritol et à son sérum.) *Annales d'oculistique*, T. CXXXI, p. 456, juin, 1904.
- (6) Quirin, Alexander.—The armed probe. (Die armierte Sonde.) *Klin. Monatsbl. f. Augenheilkunde*, Juni, 1904.
- (7) Franck, Otto.—Further experience of the treatment of perforated and infected wounds of the eyeball by strong doses of mercury. (Weitere Erfahrungen ueber die Behandlung perforierender, inficiierter Augapfel Verletzungen mit hohen Quecksilbergaben.) *Beiträge zur Augenheilkunde*, Heft 60, Juni, 1904.
- (8) Jacoby.—Poehl's Spermin in the treatment of Tabes. *Therapist*, July 15, 1904.
- (9) Bulson, Albert E.—Dionine in ophthalmic therapeutics. *Ophthalmic Record*, August, 1904.
- (10) Alvarado, E.—A new contribution to the study of silver nitrate in the prophylaxis and treatment of ophthalmia neonatorum. (Nouvelle contribution à l'étude du nitrate d'argent dans la prophylaxie et le traitement de l'ophtalmie nouveau-nés.) *Recueil d'ophtalmologie*, août, 1904.
- (11) Hippel, A. von.—On the use of tuberculine in tuberculosis of the eye. (Ueber den Nutzen des Tuberculins bei der Tuberculose des Auges.) *von Graefe's Archiv f. Ophthalmologic*, Bd. 59, i, 9 August, 1904.

- (12) Grandclément.—Is it possible to cure glaucoma by the aid of adrenaline without operation? (Kann Man ein Glaukom mit Adrenalin ohne Operation heilen?) *Die Ophthalmologische Klinik*, 20 August, 1904.
- (13) Kyle, John Johnson.—The use of Brometone in diseases of the eye, ear, nose, and throat. *Medicine*, September, 1904.
- (14) Schiele, A.—Is phlyctenular conjunctivitis a focal disease restricted to the ocular conjunctiva, and what is the best treatment? (Tritt das Eczem der Conjunctiva nur als eine herdförmige Erkrankung derselben auf? Welche Behandlung wirkt am günstigsten?) *Wochenschrift für Therapie und Hygiene des Auges*, 8 and 15 September, 1904.
- (15) Roy.—The treatment of iritis by subconjunctival and temporal injections. (Le traitement de l'iritis par les injections sous-conjonctivales et temporales.) *Annales d'oculistique*, T. CXXXII, p. 206, septembre, 1904.
- (16) Fox, L. Webster.—Saccharine saline injections in ophthalmic practice. *Ophthalmology*, October, 1904, and *Woch. f. Ther. u. Hygiene des Auges*, 1 Dezember, 1904.
- (17) Lambkin, F. J.—The mercurial preparation for use in intramuscular injection. *Journ. Royal Army Medical Corps*, October, 1904.
- (18) Ogiu.—On Isophysostigmine. (Ueber das Isophysostigmine.) *Die Therapie der Gegenwart*, November, 1904.
- (19) Birnbacher, A.—Trigemin. *Centralbl. f. prak. Augenheilkunde*, November, 1904.
- (20) Verderau.—The medical treatment of cataract. (Tratamiento medico de las cataratas.) *Archivos de oftalmologia Hispano-Americanos*, October and November, 1904, and *La Clinique Ophtalmologique*, 25 novembre, 1904.
- (21) Darier, A.—The treatment and prevention of purulent conjunctivitis by the organic salts of silver: superiority of Argyrol. (Traitement et prophylaxie de la conjonctivite purulente par les sels organiques d'argent: supériorité de l'argyrol.) *Ann. de Méd. et Chir. Infantiles*, 15 novembre, 1904, p. 788.
- (22) Cohn, Paul.—Eusemin. *Woch. f. Therapie u. Hygiene des Auges*, November, 24, 1904.
- (23) Bronner, Adolph.—Notes on a case of gonorrhœal conjunctivitis in an adult treated by peroxide of hydrogen drops. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 30.

- (24) **Daxenberger, F.**—Upon aristol oil in eye work. (*Ueber Aristolöl in der Augenheilkunde.*) *Wochens. f. Ther. u. Hygiene des Auges*, 8 Dezember, 1904.

(1) **Reumaux, Dr.** Darier's *chef-de-clinique*, reports on the use of thigénol (a synthetic preparation containing 10 % of sulphur) as a substitute for ichthyol in the treatment of blepharitis. Thigénol is a dark brown, syrupy, odourless, and almost tasteless fluid, soluble in water in all proportions; it dries rapidly on the skin in a thin layer, can be washed off with water, and has a vaso-constrictor action. Unlike ichthyol it is non-irritant. The method of using it consists in first cleansing the lid edges by "protargolage," and then with a fine brush painting the ciliary border with a thin streak of thigénol which is left on all night. Cure is complete in two or three weeks. Six cases are related in detail.

ERNEST THOMSON.

(2) Referring to a recent notice of Terson's paper on this subject, in which the latter dates his use of the treatment back to 1897, **Elschnig** points out that he himself employed saline injections in a case of blindness due to intestinal hæmorrhage in 1894. He believes that this kind of blindness is due to the formation of toxins in the blood, and not to retinal degeneration from defective blood supply to the retina and choroid.

ERNEST THOMSON.

(3) **Menacho** has injected solutions of iodipin (hyperiodised oil) beneath the conjunctiva in cases where iodine is badly tolerated when given by the mouth. The action in interstitial keratitis, both scrofulous and syphilitic, is especially good. The chief objection to its employment in this way is the occasional appearance of small, yellow swellings beneath the conjunctiva, persisting for months. The injection of iodipin is less painful than that of a mercurial salt.

HAROLD GRIMSDALE.

(4) **Blanco** compares the action of mydriatics and myotics when injected beneath the conjunctiva and when simply dropped into the other eye of the same patient. He finds that the injection acts more rapidly and more powerfully. Dilatation of the pupil is, on the average, nearly 0.75 mm. greater with injection than with instillation.

HAROLD GRIMSDALE.

(5) **De Wecker** criticises the statements made, in the award of the von Graefe medal, that Römer has rendered it possible to control the dose of jequiritol, and by obtaining its serum banished the dangers which eyes treated with infusion of jequirity not infrequently run. He claims that equal doses

of jequiritol (abrin) produce very different results in different eyes, and that it gives rise to complications which he has never seen as a result of treatment with infusion of jequirity, and which are not controlled by antiabrin. He quotes cases and statistics from various observers in support of his contention.

R. J. COULTER.

(6) **Qurin** describes an instrument said to be of service in practical eye work, namely, the so-called "armed probe," employed daily in H. Pagenstecher's clinic for many years. It consists of a piece of silver wire—8 cm. to 10 cm. long, and 0.2 mm. to 0.4 mm. thick—both ends of which are coated with silver nitrate. The crystals are melted in a porcelain capsule over a Bunsen flame, and the end of the wire, first carefully cleansed with emery paper, is dipped into the liquid, so that it becomes covered with a thin and even layer of silver. The prepared probes are kept in a tightly-corked test tube. The probes have certain advantages over the solid stick and the 2 % solution of silver nitrate. For example, they permit of accurate dosage, penetrate deeply, are sterile, and, lastly, limit the action of the silver to the diseased spot. The armed probe is employed to touch the tiny abscesses of ulcerative blepharitis, the ulcerations of external canthal dermatitis, lacrymal and corneal fistulæ, multiple chalazia, lupus of the face, and so forth.

S. S.

(7) Encouraged by the satisfactory results obtained by Schirmer (*Graefe's Archiv f. Ophthalmologie*, 53, i.), who, by energetic mercurial treatment, was able to save 60 % of eyeballs suffering from perforating and infected wounds, **Franck** reports a further series of cases, from the Greifswald clinic, which have been treated in an identical way. He also refers to a number of recent publications, which have amply corroborated Schirmer's statements. His own cases are subdivided according to their fibrinous or suppurative nature. Out of 20 cases of the first, 14 have been saved, while in the 6 lost ones excision became necessary in 3, resection in 2, while in 1 where only neurotomy was performed, sympathetic ophthalmia supervened. The author concludes that mercurial treatment forms a bar against sympathetic ophthalmia only as long as it is actually continued; if stopped prematurely, while the inflammation still persists, only effective surgical means form a safeguard against sympathetic affection. The second group includes 15 cases of suppurative iridocyclitis, of which 6 recovered. Franck cannot say much in favour of Haab's treatment (introduction of small rods of iodoform into

the eyeball), which seemed to have a marked detrimental effect in some cases, while a few others were favourably influenced.

R. GRUBER.

(8) A man of 30 years, with a history of recent syphilis, developed symptoms of tabes, not influenced by mercurial inunctions, electricity, or gymnastics. After ten injections of spermin, there was marked improvement in the patient's condition, so much so that the sexual instinct, which was nearly extinguished before the treatment, made itself very apparent. Bossf's case, where ataxic atrophy of the optic nerve was brought to a standstill by spermin, is quoted in **Jacoby's** communication.

(9) **Bulson** claims that dionine is one of our most valuable remedies. He has found it of service in iritis, glaucoma, corneal ulceration, and intra-ocular hæmorrhage. In addition to this, the author has observed that the capsular opacities remaining after cataract extraction disappear under dionine, so that dissection becomes unnecessary. Bulson employs a 5 % to 10 % solution of dionine in water.

(10) **Alvarado**, being convinced of the superiority of nitrate of silver over the newer salts of silver in the treatment of ophthalmia neonatorum, made inquiries as to the practice of thirty-one representative ophthalmic surgeons in different European countries. The result was a practically unanimous verdict in favour of the nitrate salt. The strength generally used by these surgeons was 2 per cent. solution, but some used 4 per cent. and others 8 per cent. solutions. The reaction following instillations of nitrate of silver is generally little or none, and many surgeons of extensive experience have never seen any reaction after the Crédé procedure. The author quotes the experience of Schalscha (*see* THE OPHTHALMOSCOPE, June, 1904, p. 240) who inadvertently instilled a 20 per cent. solution of silver nitrate into the eyes of a baby suffering from ophthalmia neonatorum. The reaction was intense, and the cornea became milky-white at once. In 36 hours the corneal epithelium was completely regenerated, and 24 hours later, there was no trace of secretion and cure was complete !

J. JAMESON EVANS.

(11) **von Hippel** has used tuberculine in the treatment of tuberculosis of the eye for the last ten years, and has come to regard it as a means of saving eyes—some with useful vision—which he once considered past help. It is less tuberculosis of the choroid, where the diagnosis must often remain doubtful, than affections of ciliary body, iris, cornea,

sclera, and conjunctiva, which respond to the specific action of the remedy. Hippel now uses the new preparation "tuberculin T.R." He starts with injections of $\frac{1}{500}$ milligramme and increases the dose by $\frac{1}{500}$ up to $\frac{1}{50}$ milligramme, then by $\frac{1}{50}$ to $\frac{1}{10}$ and afterwards by $\frac{1}{50}$ or $\frac{5}{50}$, but never beyond 1 milligramme, which seems strong enough to deal with even the worst cases. Injections should be made on alternate days only, and the temperature must be taken at two-hourly intervals, as no increase of dose must be made if the temperature rises above 100.5°F. The author advises against beginning with stronger concentration, as this may lead to ulcers. It is particularly important not to discontinue the treatment prematurely; in serious cases a course of quite six months' treatment is required. Some primary increase of inflammation must be expected, as tuberculine does not kill the bacilli, but sets up reactive inflammation leading to cicatrisation. Out of 23 cases of tuberculosis of the various parts of the eye, the author excludes 13 as of a kind which occasionally yield to orthodox treatment (atropine, fomentations, etc.), but 10 cases had offered a most stubborn resistance to any other method of treatment. Still, in all these cases, with the exception of one only, the result of tuberculine injections was favourable, leading to recovery sometimes with good sight and no relapse, in some cases up to 9½ years. It must also be mentioned that no bad effect as to general health has ever been seen; while excision of the eyeball, as formerly practised, occasionally leads to death from meningitis. R. GRUBER.

(12) **Grandclément**, in a case of chronic ophthalmia, instilled one drop of adrenaline into each eye, every half-hour. Three days later the eyes had become quite soft and sight much diminished. The sight was slowly recovered, but the low tension remained. This rather unpleasant experience was the starting point for trying the drug in glaucoma. In a case of acute glaucoma of recent date the following solution was used every half-hour for three days without interruption: adrenaline (1:1000), 3.0; eserine, 0.05; distilled water, ad. 10.0. The success was complete. The same solution, moreover, was found very beneficial in a case of buphthalmos; the sight improved considerably, although the tension was only slightly influenced. But the drug failed in an acute glaucoma which had lasted a whole month. Adrenaline, therefore, is only suited to fresh cases, in which permanent changes have not had time to develop. C. MARKUS.

(13) **Brometone**, one of the higher alcohols (tri-brom-tertiary-butyl alcohol) occurs in the form of fine, white crystals. It has been employed by **Kyle** as a nervous sedative in cases

of asthenopia, as well as in ametropic headaches where glasses fail to give relief. Five-grain doses were given every three or four hours.

(14) Examination with a magnifying glass of the palpebral conjunctiva, especially the sulcus subtarsalis of the upper lid, in cases of phlyctenular conjunctivitis, revealed to **Schiele** the frequent occurrence of greyish nodules, small ulcers, vesicular or papillary elevations, which he regards as eczematous formations analogous to the phlyctenulæ of the conjunctiva bulbi. His local treatment consists in 3 to 4 subcutaneous injections in the temple of a third to half a syringe of a 5 % solution of sodium iodate. A 1 % solution of the same drug is used for subconjunctival injections in cases with corneal complications. Cauterisation of the swollen fornix is performed with a pencil of the same substance or with a solid silver stick, after the method of Schiess. In fascicular keratitis Schiele prefers the iodic acid pencil to the galvano-cautery, and of the modern bismuth compounds, he recommends iodo-gallicin and bismuth-oxy-iodide-tannate (Ibit), which are applied by being dusted into the eye, instead of calomel.

C. MARKUS.

(15) In cases of rheumatic iritis, **Roy**, in addition to the classical treatment, injects 0.07 centigrammes of salicylate of lithium and 0.004 milligrammes of hydrochloride of cocaine dissolved in 6 to 8 drops of sterilised water beneath the conjunctiva. After 24 hours' interval he makes a similar injection beneath the skin of the temple, unless the periorbital pains are severe, when he gives the temporal injection immediately after the subconjunctival one. If necessary, the treatment is repeated on alternate days or less frequently according to the progress of the case. In syphilitic iritis he adopts a similar treatment, but substitutes for the lithium injection 6 to 8 drops of a 1 in 2,000 solution of perchloride of mercury in which is dissolved 0.004 milligrammes of hydrochloride of cocaine. He gives histories of cases illustrating the results he has obtained by this method and advocates its employment in all cases of rheumatic and specific iritis, claiming that it shortens the course of the disease and that the subconjunctival injections relieve the ocular pain, while the temporal ones act on that in the periorbital region.

R. J. COULTER.

(16) **Fox** describes his experiences with the subconjunctival injection of 10 cc. to 20 cc. (*sic*) of a solution of sodium saccharinate, containing 5 to 15 grains to the ounce of distilled water. He has found the remedy of service in interstitial

keratitis and in corneal and vitreous opacities. On the other hand, the injections did not succeed in Fox's hands in cases of iritis, irido-cyclitis, conjunctivitis, retinitis, choroiditis, and papillitis. It may be noted that prior to making the injection, Fox introduces an eye speculum, a practice condemned by Darier as alike unnecessary and alarming to the patient.

(17) Clinical experience has convinced **Lambkin** that syphilis is best treated by introducing metallic mercury into the system in much smaller doses than one has been accustomed to think necessary. He recommends the following formula, of which five to ten drops are to be injected once a week into the muscles: Hydrarg. pur., 2 drachms; lanolin anhydros, 4 drachms; and parolein carbol., 2 %, 5 drachms.

(18) Isophysostigmine, another alkaloid of the Calabar bean, much resembling physostigmine, was first examined by Prof. Kobert in Rostock. **Ogiu**, a Japanese oculist, who made further experiments with the drug, found that it acts on the pupil more quickly, with greater energy, and for a longer period than eserine, yet its effects are more easily neutralised by atropine. He, therefore, holds that the new drug is likely to be preferred in ophthalmology. C. MARKUS.

(19) Trigeminal is made by the action of butyl chloride hydrate upon pyramidon, an amido-derivative of antipyrin. **Birn-bacher**, of Gratz, has used the agent extensively, and has convinced himself that any kind of ciliary pain may be relieved by its administration. For example, in acute glaucoma and severe cyclitis its analgesic action is very remarkable. The powder should be prescribed in gelatine capsules, and a single dose of 0.25 g. is, as a rule, enough to obtund pain. S. S.

(20) The removal of the cataractous lens, is to some extent, a confession of impotence; we give up all attempt to remedy the abnormal state, and content ourselves with ablating the diseased organ; it is as if a surgeon were to treat all disease of the foot by amputation, says **Verderau**, and therefore he has tried to draw attention again to the medical treatment of opacities of the lens. He produced cataract artificially in rabbits, and then injected iodide of potassium into the opaque lens. He found that the opacity diminished considerably, but the experiment was fruitless, because all the rabbits suffered a few days after the experiment from a severe inflammation. In a second series he gave subconjunctival injections and found the action the same when the drug was given in this

way. Encouraged by the good results, he began similar injections in those patients who came under his care with senile cataract. But the pain and the long duration of the treatment were sufficient to scare most of them. One patient alone had courage to undergo a full course; this was a woman of 64, who had noticed failing vision for three years, due to cortical opacities of both lenses. R.V. $\frac{1}{6}$, with great difficulty; L.V. $\frac{1}{4}$. After a number of injections extending over two months, her vision improved to $\frac{3}{8}$ easily in each eye. Treatment was not carried out in both eyes at the same time, and the injections into the right eye had no effect on the left. The vision of the latter remained at $\frac{1}{4}$, until the injections were practised on this in its turn, when the vision of this eye improved also. Step by step with the improvement of vision the opacities of the lenses disappeared. Several other imperfect cases are recorded in the paper, but although many patients underwent only one injection, Verderau found in all definite improvement. The pain of the treatment is great and not much lessened by the addition of acoin to the solution to be injected: the alkaline fluid rapidly precipitated the alkaloid, and the results were not constant.

HAROLD GRIMSDALE.

(21) In slight cases of catarrhal conjunctivitis in infants **Darier** recommends the use, four or five times a day, of a 5 % solution of argyrol. In cases of purulent ophthalmia a 20 % solution should be dropped into the eyes every hour or even every half-hour. S. S.

(22) Eusemin is a mixture of cocaine and adrenaline, prepared according to the formula of Rosenberg and Wohlaue, of Berlin. It contains, besides cocaine and adrenaline, chloretone and physiological salt solution. It has been placed upon the market* in small hermetically sealed glass tubes, each containing 3 c.cm. Eusemin has recently been employed as an injection as an anæsthetic in dental work. Its use has been extended to ophthalmology during the last few months by **Cohn**, who finds eusemin most useful in small operations about the eyelids, particularly the removal of chalazia. The amount injected never exceeds more than one-half a Pravaz syringeful. No complications have so far been observed. S. S.

(23) **Bronner** treated a case of severe gonorrhœal ophthalmia in a woman with sublimate lotion, silver nitrate (3 %), and peroxide of hydrogen (3 %). The patient recovered with sight equal to one-half normal.

*Eusemin can be obtained from the Dental Depôt of Viktor Pappenheim and Co., 4-5, Schadowstrasse, Berlin. Price per tube, 50 Pf. It is also stocked by Mr. Martindale, 10, New Cavendish Street, W.—EDITORS.

(24) **Daxenberger**, a Bavarian surgeon, after alluding to the comparative neglect in Germany of oil as a vehicle for alkaloids, mentions the value in eye work of aristol (10%) dissolved in sesame oil, a product manufactured by the Bayer Company at Elberfeld. It forms a clear, reddish-brown fluid, which never becomes rancid, and which is non-irritating to the normal eye. Daxenberger has found it useful in affections of the eyelids, as blepharitis; in burns of the lids, conjunctiva, or cornea, as from lime; in corneal diseases, as keratitis eczematosa, erosions, and traumatic keratitis; in episcleritis; and, lastly, in eczema of the face or scalp. The remedy appears to possess marked powers of reducing pain in superficial inflammations of the eye. S. S.

IV.—OPERATIONS.

(First Notice.)

- (1) **Trousseau, A.**—The capsular ligature in the operation for Strabismus. (*La ligature capsulaire dans l'opération du Strabisme.*) *Annales d'oculistique*, T. CXXIX, 1903, p. 17.
- (2) **De Wecker, L.**—The rôle of the capsule of Tenon in operations for Squint. (*Le rôle de la capsule de Tenon dans les opérations de Strabisme.*) *Annales d'oculistique*, T. CXXX, 1, 1903, p. 5.
- (3) **Magaldi, A.**—A contribution to the operations for Blepharoplasty. (*Contribut alla casuistica della Blefaroplastia.*) *Annalia di Ottal.*, 1903, V. 32, Fas. 7 & 8, p. 465.
- (4) **Constantinesco, E.** (Roumania).—On the treatment of total recent Staphylomata of the Cornea by Extraction of the Lens. (*Sur le traitement des Staphylomas totaux recents de la Cornée, par l'extraction du cristallin.*) *La Clinique Ophtalmologique*, 10 fevrier, 1903.
- (5) **Sourdille.**—On an operation for Ptoxis. (*Sur un procédé opération du ptosis.*) *La Clinique Ophtalmologique*, 10 mars, 1903.
- (6) **Taylor, G. Bell.**—Clinical Lecture on the art of Cataract extraction. (*Leçon clinique sur l'art d'extraire la cataracte.*) *La Clinique Ophtalmologique*, 25 mars, 1903; and *Clinical Journal*, Sept. 2, 1903.
- (7) **Terson, A.**—Concerning the operative treatment of total or partial Trichiasis. (*A propos de l'opération du trichiasis total ou partiel.*) *La Clinique Ophtalmologique*, 10 avril, 1903.

- (8) Woodruff, H. W.—Report of cases of extensive Symblepharon and of shrunken and obliterated cul-de-sacs, relieved by skin grafting, with description of the operation. *Annals of Ophthalmology*, April, 1903.
- (9) Weill, N. J.—Report of seven extractions with Haab's electro-magnet. *American Journal of Ophthalmology*, May, 1903.
- (10) Jocqs.—Operation for Strabismus by Musculo-Capsular Advancement. (De l'opération du strabisme par l'avancement musculo-capsulaire.) *La Clinique Ophthalmologique*, 10 mai, 1903.
- (11) Pflüger.—The actual state of the question of the operative treatment of non-cicatricial Ectropium. (Ectropium non cicatriciale, odierno stato della sua cura operativa.) *Archivio di Ottalmologia*, 1903, vol. X, Fas. 11 and 12, p. 438.
- (12) Gifford, Harold.—Slight modifications of the van Millingen and of the Hotz-Anagnostakis operations for entropium. *Ophthalmic Record*, July, 1903.
- (13) Ramsay, A. Maitland.—The Cosmetic Value of Paraffin Injections after Enucleation of the Eyeball. *Ophthalmic Review*, July, 1903.
- (14) Clark, C. F.—The correction of sixteen diopters of astigmatism by means of the galvano-cautery. *Trans. American Ophthal. Society*, Vol. X (1903), p. 125.
- (15) Bronner, Adolph.—Modified Mules's glass ball for use after removal of the eye. *British Medical Journal*, September 26, 1903.
- (16) Ferri, L.—Modifications in the operation for trichiasis-hæmostasis by adrenaline. (Modificazione all'operazione di trichiasi—la surrenalina nell'ischemia operatoria.) *Annali di Ottalmologia*, 1903, Fas. 9 and 10, p. 617.
- (17) Marple, W. B.—Case of traumatic ptosis of the left eye operated upon with most satisfactory result according to the method of Dr. Gruening or Gillet de Grandmont. *Trans. Amer. Ophthal. Society*, Vol. X (1903), pt. 1, and *Ophthalmic Record*, October, 1903.

(2) De Wecker discusses the part played by Tenon's capsule in operations for squint, more especially in relation to those new surgical procedures introduced respectively by Trousdale, Verhoeff, and Jocqs. The author affirms that capsular advancement, when correctly performed, entails no risk of an unsightly projection at the site of operation, and, further,

that when combined with tenotomy, it is essentially a practical operation, and from that point of view preferable to muscular advancement or similar proceedings. H. DE V.

(3) **Magaldi** reports the details of fourteen cases of blepharoplasty operated upon by Professor de Vincentiis, at the Naples Hospital. The particulars of each case must be read in the original communication. The many figures which accompany the paper prove that a pedunculated flap and sliding of the tissues suffice to obtain the best results. Transplantation in mosaic or in big flaps presents too many chances of the transplanted tissues becoming necrotic. A. ANTONELLI.

(4) After some preliminary remarks in which he points out that this operation, known since the time of Graefe, has not received sufficient attention, **Constantinesco** proceeds to relate five cases of recent corneal staphyloma in which complete flattening was obtained by extraction of the lens. In one case, where a small portion of cornea remained clear, an iridectomy was subsequently performed by the method attributed to Gayet (Lyons), which consists in incising the cornea from without inwards down to the layer of iris attached to the back of the cornea, and then seizing and snipping the iris, which prolapses into the wound. ERNEST THOMSON.

(5) **Sourdille** has performed on the *cadaver*, and on one case (a man aged 62 years), a modification of Angelucci's operation. The latter consists in finding the levator tendon at its insertion into the tissues, suturing it to the deep surface of the frontalis, thus including the orbicularis in the loop so formed (*International Congress of Medicine*, Paris, 1900). Sourdille, to avoid interference with the orbito-palpebral furrow, makes a curved incision in the region of the eyebrow, dissects down the musculo-cutaneous flap, and exposes the septum orbitale. This he incises at its insertion to the orbital margin, hooks up the levator with a squint hook, passes two double-needed threads through it, each forming an $\times$ suture, cuts the tendon above the loops, when it is held up by the hook, dissects a small lodgment for the end of the tendon, and buries the four threads between the periosteum and the frontalis, and brings them out 3 mm. to 4 mm. above the original incision in the skin. Each pair of threads is then bow-knotted over a roll of gauze, so that adjustments can be made as required, and the musculo-cutaneous flap is replaced. At the operation the threads are drawn, so that a medium elevation of the eyebrow uncovers the pupil. It is claimed that by this method of operating, the lower edge of the incision in the septum orbitale

acts as a pulley; and that by thus drawing on the levator from behind the septum, there is no interference with the orbito-palpebral furrow, because by means of the pulley the communicated action of the frontalis appears to come from the orbit. The author is very content with this operation, the good result being maintained after six months. Two cuts accompany the text.

ERNEST THOMSON.

(6) This is a report of an address delivered before the Nottingham Medical and Chirurgical Society. **Taylor** here describes in detail the way in which he performs the operation without iridectomy.

(7) **Terson** speaks highly of the value of the modification of Panas' operation for trichiasis, described in a recent number of *La Clinique* by Thilliey. This consists, when there is danger of producing ectropion, in leaving in the middle of the lid a bridge of undivided tarsus and conjunctiva. More especially, Terson adds, is this bridge advisable when, on account of marked trichiasis, an operation must be done on a tarsus which is not much thickened or altered.

ERNEST THOMSON.

(8) **Woodruff** has operated upon six cases—three of symblepharon and three of shrunk cul-de-sac—by the following method:—chloroform having been administered, and the skin about the eye having been sterilised, the field of operation is freely flushed with boric acid lotion. If a pseudopterygium is present, it is first dissected from the cornea. The lid is thoroughly freed from its attachment to the eyeball, while cicatricial bands must be removed entirely. Bleeding is checked with hot water. A plate is then cut from a sheet of block-tin, and trimmed so that it may fit into the newly-formed cul-de-sac. Four holes are made for sutures, two at the outer and two at the inner angle of the plate, to correspond to the margin of the lid. A Thiersch graft, about one-third wider and more than three times as long as the plate, is taken from the inner surface of the arm, and placed upon the tin plate in such a way that its raw surface is external. Plate and graft are then pushed into the cul-de-sac, and sutured to the lid near its margin, the sutures being tied over small rolls of gauze. The eyelids may be sewed together, and dressed and bandaged in the usual way. Both eyes should be bandaged as long as the plate is in place, and absolute quiet maintained. The plate is removed in four days.

(9) Haab's giant magnet teaches **Weill** that most of the splinters that lodge in the eye are to be found in the vitreous humour. Thus, in thirteen of his own cases, the foreign body was located

once in the anterior chamber, twice in the crystalline lens, and no fewer than ten times in the vitreous humour. His results, thus far, are: enucleation, one case; shrunken, quiet, blind eye in three; traumatic cataract in five; and normal or nearly normal vision in four. In extracting splinters of iron or steel from the eye with the giant magnet, Weill thinks we cannot do better than follow the rules laid down by Haab. The paper concludes with full details of seven cases treated by the giant magnet. These do not lend themselves to abstract. For details, the original must be consulted.

(10) After some remarks on the disadvantage of accepting the best parts of a new method without tying oneself down to the employment of the whole, **Jocqs** describes the operation he employs for the cure of strabismus. As a rule, he does a careful tenotomy of the antagonist, confined to its very insertion. He then places deeply in the episcleral tissue near the cornea opposite the muscle to be advanced, a loop of double-armed thread, incises the conjunctiva behind this loop, extends this incision up and down, and frees the conjunctiva to a certain extent backwards. Next, without using a hook, seizing the capsule and the tendon in toothed forceps, he snips them both away at the insertion and incises the capsule upwards and downwards, but does not usually interfere with the part of the capsule attached to muscle and tendon. Substituting now a forceps-hook for the forceps, he lifts the detached tendon and capsule, and frees the under surface as much as he desires; then passes the two needles of the double-armed thread through muscle and capsule from the ocular to the conjunctival surface, draws forward the tendon and capsule towards the cornea, and knots the two ends of the thread. For further security, two lateral sutures are passed in the usual way, but they include only the capsule and conjunctiva. Both eyes are bandaged for six days. **Jocqs** has practised this operation for ten years and is quite satisfied with it.

ERNEST THOMSON.

(11) In cases of simple ectropion without tarsal alterations, **Angelucci's** operation gives the best and most certain results. Thickenings of the tarsus call for the same operation combined with the partial or complete excision of the tarsus. **Truc's** method, *suture en vanne*, is particularly indicated in cases of ectropion *ex vacuo*, such as occurs in a person whose eye has been removed. The transplantation of skin flaps may possibly be necessary when the conjunctival surface is reduced.

A. ANTONELLI.

(13) In a previous paper in the *Lancet** **Ramsay** described the operation he had done twenty times, and since that time he has done 12 additional cases, and in this paper he gives his later experience, and the detailed method of performing the operation. The conjunctiva is divided as close as possible to the cornea, and a catgut suture is placed in each divided rectus. The eye is then enucleated in the usual manner, and the cavity is packed with gauze wet with adrenalin. A strong silk purse-string suture is then passed round the opening, the packing is removed, and the dry cavity filled with paraffin melting at 104° Fahr. A special syringe is used made by Messrs. Down Bros. The author is careful to point out that this method should not be used should the eye be suppurating, and although the paraffin does sometimes come out, yet he is very pleased with the cosmetic effect and the after-reaction is not great.

C. D. M.

(14) A man, aged 42 years, was found to have 22.5 D. of astigmatism as the result of a chronic ulceration occupying the upper part of one cornea, some 3 mm. from the limbus. The peculiar greyish-white groove was curetted, and pure carbolic acid was then applied. Twelve days later it was touched with the galvano-cautery. The amount of astigmatism gradually diminished, until some three months after the first operation, it amounted only to about 6 D., and when this was corrected, vision was normal.

(15) **Bronner** has adopted the following operation in a certain number of cases with success. He employs a modified Mules's glass sphere, which is made with a hole through its middle. A catgut suture is passed through and tied to each of the tendons of the four recti muscles. The eye is next removed. The modified glass ball is placed in Tenon's capsule, and a silk suture, with a needle attached to each end, is passed through the central aperture. The superior, inferior, external, and internal recti muscles are then tied together over the sphere. Several sutures, put through the subconjunctival tissue above, below, and over the ball, are tied together in a vertical line. The needles attached to the end of the suture belonging to the glass ball, are passed through either side of the subconjunctival tissue. Four sutures are then put through the conjunctiva on either side of and over the ball, and tied in a horizontal line. The ends of the suture of the glass ball are tied loosely together.

*See THE OPHTHALMOSCOPE, Vol. I (1903), p. 16.

(16) **Ferri** replaces general narcosis and mechanical hæmostasis, during operations upon the eyelids, by the employment of a mixture of adrenaline and cocaine. Of this liquid he makes interstitial injections and during the operation repeated injections into the field of operation. Ferri associated with advantage the deep sutures of Hotz and Streatfield with the procedure of Jæsché-Arlt.

A. ANTONELLI.

(17) In a case of traumatic ptosis **Marple** obtained an excellent result, as attested by the photographs which accompany his paper, by operating according to the method described independently by Gillet de Grandmont (*Recueil d'Ophthal.*, 1891, p. 267), and by Gruening (*Trans. American Ophthalmological Society*, Vol. IX, p. 574). The operation in question is performed as under: a Snellen's hard rubber clamp having been introduced, an incision is made parallel to the free border of the upper lid at a distance of 3mm. to 4mm. from the latter. The whole tarsal plate is exposed by dissecting the flaps thus made, and a semilunar piece of the so-called cartilage is excised, so that the speculum is seen through the opening. The breadth of this flap in the middle should equal the estimated amount of ptosis. The edges of the incision in the tarsus are brought together with catgut (No. 00), and the sutures are tied. The skin is not sutured, inasmuch as the parts at once fall into apposition. Gruening applies his sutures in a somewhat different manner, but otherwise the operations are practically identical.

V.—INSULAR (DISSEMINATED) SCLEROSIS AND AFFECTIONS OF THE EYE.

- (1) **Kampherstein**.—Upon the eye symptoms of multiple sclerosis. (*Ueber die Augensymptome der multiplen Sclerose.*) *Archiv f. Augenheilkunde*, 1903, p. 41.
- (2) **Morawitz, P.**—Multiple sclerosis. *Deutsch. Arch. f. klin. Med.*, Bd. XXVIII, Nr. 1 und 2, and *Medical News*, 4th March, 1905.
- (3) **Spiller, William G. and Camp, C. D.**—Multiple sclerosis, with a report of two additional cases, with necropsy. *Journal of Nervous and Mental Diseases*, July, 1904.
- (4) **Hobhouse, E.**—The early symptoms of insular sclerosis. *Lancet*, 18th February, 1905.

(1) **Kampherstein's** communication is in some sort a continuation of the work upon the eye symptoms of multiple sclerosis already done by Uhthoff (1889) and by Lübbbers (1897)

respectively. His paper is based upon 37 cases, in which the diagnosis of sclerosis could be determined with certainty in 23, while in the others that affection was almost certainly present. The majority (26) were met with in men, and a lesser number (11) in females—in other words, the proportion between the two sexes was as 70 is to 30. These figures contrast with Bruns and Stölting's cases, 38 in number, of which 25 occurred in young girls. In Uhthoff's series of one hundred cases, two-thirds were in men, and one-third in women. According to Strümpel, multiple sclerosis occurs between the 18th and 35th year of life. As regards age Kampherstein's cases were thus distributed:—

10 to 20 years	...	...	9 patients.
20 to 30 years	...	...	12 "
30 to 40 years	...	...	8 "
40 to 50 years	...	...	4 "
50 to 60 years	...	...	3 "

Multiple sclerosis, according to Kampherstein, is relatively frequent in childhood, since 6 of his patients (or 18 %) were between the ages of 10 and 15 years. With regard to the etiology of the disease, nothing definite is known, but influenza, rheumatism, tuberculosis, chlorosis, measles, and traumatism, were mentioned in the histories of various patients.

The eye symptoms met with in insular sclerosis are discussed by Kampherstein under the following heads: (1) ophthalmoscopic changes; (2) changes in the fields of vision; (3) changes in the pupils; (4) disturbances of the eye muscles; and (5) nystagmus.

(1) **Ophthalmoscopic changes.**—Kampherstein's figures confirm the frequency of ophthalmoscopic changes in insular sclerosis, since such existed in twenty-four—or 70 per cent.—of his thirty-seven cases. This proportion exceeds that found in Uhthoff's series of one hundred cases, where it was 45 per cent. On the other hand, changes were present in 81 per cent. of Lübberts' eleven cases, and in 50 per cent. of Hoffman's one hundred cases.

The nature of the lesions found by Kampherstein was as follows:—

- (a) Pronounced optic atrophy—one bilateral case.
- (b) Incomplete atrophic discolouration of the entire papilla—*i.e.*, temporal half quite white, nasal half still showing a reddish colour—twice bilateral, and once unilateral.
- (c) Temporal pallor—bilateral in eight, and unilateral in ten cases.
- (d) Sector-like fading—twice unilateral.
- (e) Optic neuritis—once bilateral.

Complete amaurosis is very rare in insular sclerosis. Uhthoff found it once only in his cases, while Charcot and Buzzard have

never come across it. In the following case, however, incomplete ended in practically complete atrophy of the optic discs :—

A maidservant, aged 25 years, had suffered from measles as a child, and for three years had experienced weakness in walking, dizziness, and glittering (*Flimmer*) before her eyes. Syphilis denied. When examined by Kampherstein in May, 1901, the patient, a well-built girl, complained of failing sight, of incontinence of urine and faeces, of irregular menstruation, and of weakness in her legs. There was marked nystagmus on looking towards the right. Pupils were somewhat sluggish. R.V. = fingers at 2½ metres. L.V. = fingers at 4 metres. Pallor of each disc. There was spastic paraplegia, more pronounced on the right than the left side. The legs were ataxic. Tendon-reflexes increased, especially on right. Left ankle-clonus. Babinski's phenomenon positive. Sensibility to pain distinctly reduced.

Until the year 1884, optic papillitis was not one of the recognised symptoms of insular sclerosis. Instances of the association were then reported by Sharkey, Nettleship, Gnauk, Parinaud, and Eulenburg. It is probable that the neuritis runs a quick course, and so may readily be overlooked. Bruns and Stölting have pointed out that it may appear many years before the other symptoms of sclerosis, a sequence regarded by them as peculiarly typical of many cases of the last-named disease. "Choked-disc" (*Stauungspapille*) has been mentioned as a complication of disseminated sclerosis by Bruns and Stölting and also by Rosenfeld, although it was not found in any of Kampherstein's patients.

Optic neuritis was observed once only by Kampherstein. The facts of the case are as under :—

A man, aged 30 years, was seen in October, 1900. He had experienced uncertainty in walking for some time. The tendon-reflexes were exaggerated, and nystagmoid jerks were present in extreme positions of the eyeballs. Both optic discs were congested, and their edges were ill-defined, but there was no actual swelling. On the outer side of one disc were several small hæmorrhages, arranged radially. V. = 6/5. Fields for white and colours presented no alterations. The patient, it may be added, suffered from tuberculosis of the lungs and larynx.

(2) **Changes in the fields of vision.**—The fields were mapped out carefully in 33 of the cases, and in 11 of them functional disturbance of the visual apparatus could be demonstrated. Kampherstein, following Uhthoff's example, classifies the changes met with in the following way :—1. Central scotoma, absolute (5) and relative (5). 2. Central scotoma with simultaneous peripheral contraction of the field (3). 3. Peripheral contraction with relatively intact central vision (4). 4. Individual colours, as red and green, not recognised over the whole field (2).

(3) **Changes in the pupils.**—Pupillary changes in insular sclerosis present little that is characteristic, and have nothing like the same diagnostic value as in tabes dorsalis. Kampher-

stein found anomalous pupils in four of his cases, namely, in three anisocoria, and in one a difference between the pupils in regard to their response to light.

(4) **Disturbances of the eye muscles.**—Uthoff found disturbances of the ocular muscles in 17 per cent. of his cases of insular sclerosis, and in 20 per cent. of his cases of *tabes*. They existed in 10, or about 30 per cent. of Kampherstein's present cases. Abducens paralysis (unilateral or bilateral) was the common form. In five cases lateral movements, not individual muscles, were affected. Paralysis of convergence, the occurrence of which was noted in three cases of insular sclerosis by Uthoff, was not observed by Kampherstein.

(5). **Nystagmus.**—Nystagmus is usually stated to exist in 50 per cent. of the cases of disseminated sclerosis. The symptom was found by Uthoff to be present in 58 per cent.—that is to say, in 12 per cent. actual nystagmus, and in 46 per cent. nystagmus-like jerks. Marie places the proportion as varying from 70 per cent. to 80 per cent. In Kampherstein's cases it was present in 30—in 4 actual nystagmus, and in 26 nystagmoid jerks in the end-positions of the eyes. Two of these patients complained of the apparent movement of external objects. In a boy, aged 13 years, rapid bilateral nystagmus was present only when one eye was covered, or when the eyes were directed laterally beyond the limits of the binocular field of vision.

S. S.

(2) It seems that among individuals living in the country the most common organic disease of the nervous system is multiple sclerosis, while the inhabitants of cities are more frequently affected with *tabes*. The classical type of multiple sclerosis as described by Charcot is rare. Thus, P. Morawitz found scanning speech in only 12 per cent., nystagmus and tremor in about 50 per cent. As opposed to hysteria, eye-disturbances are rather frequent, thus, atrophy of the optic nerve was seen in about 40 per cent. Extensive disturbances of sensibility are, however, rare; usually only a hyperesthesia is found which involves only the distal portions of the extremities. The abdominal reflexes are often exaggerated in hysteria, but lost in about 50 per cent. in sclerosis. In the latter condition, the Babinski reflex is often positive, showing that an organic affection of the nervous system is present. Bladder disturbances in sclerosis are usually transient, with recurrent difficulty in urination or moderate incontinence, while in hysteria one often sees ischuria, developing acutely and intensely after a psychical trauma.

(3) *Apropos* of two cases of multiple sclerosis, accompanied by optic nerve degeneration, Spiller and Camp say: "The frequent implication of the optic nerves in multiple sclerosis was known

to Charcot some thirty years ago. It has been mentioned repeatedly by Oppenheim, and more recently the subject has received attention from Bruns and Stölting and others. A person with sclerotic patches in the optic nerve may have little or no disturbance of vision, and the ophthalmoscopic examination may reveal an unsuspected condition, especially as the disease of the optic nerve may be among the first or even the first sign of the multiple sclerosis. Sclerotic patches may occur in any part of the visual tracts as far back as the cortex of the occipital lobe. According to Bruns and Stölting, the chiasm is frequently the seat of sclerotic areas. The ophthalmoscopic change consists often of pallor of the temporal side of the disc; optic neuritis or optic atrophy also may be found."

(4) **Hobhouse** has an interesting paper on the early symptoms of insular sclerosis, which deserves to be read and pondered by every ophthalmic surgeon. Insular sclerosis, he points out, is the commonest of all the chronic diseases of the central nervous system met with in the out-patient room of a general hospital. Its symptoms are so diverse that its earlier stages may fall under the notice of any medical man, be he physician, surgeon, aurist, gynæcologist, laryngologist, or ophthalmic practitioner. It is, as insisted upon some years ago by Buzzard, likely in its early stages to be confounded with hysteria. An early diagnosis is, therefore, important, if only to save a patient suffering from a serious affection from being treated "as a wretched hysterical creature." The symptoms of an established case—spastic gait, tremor, scanning speech, increased reflexes, and nystagmus—are familiar to everybody, but the diagnosis of insular sclerosis would be seldom made if one waited until the patient developed all these symptoms. The truth is that the distribution of the sclerotic changes is, generally speaking, a random one, with the necessary consequence that the initial symptoms may assume almost any character. According to Hobhouse, however, most cases commence in one of two or three different ways. Most of the patients go in the first instance to the physician complaining of weakness of the legs, or of one side, or of one limb, or of nervousness and trembling. Another large group first consult the ophthalmic surgeon, often at a date anterior to that of the onset of any general symptoms. Of sixteen cases, which form the basis of Hobhouse's communication, three began with such purely ocular symptoms as sudden loss of sight (2), ophthalmoplegia externa (1). Moreover, diplopia accompanied the earliest symptoms in one case, and in four others the eye symptoms were the next to appear, at intervals of one month, eighteen months, and ten years after the onset.* In

* The date in the fourth case was unknown.

all the other cases the initial symptom was loss of power or of sensation (chiefly the former) in one of the limbs or both legs, generally rapidly passing off. In a large proportion of the cases the sphincters were affected, often quite early. As, unusual symptoms of insular sclerosis, Hobhouse mentions persistent tinnitus and menorrhagia. The confusion of sclerosis with hysteria is a real difficulty, since a patient with insular sclerosis may see one day and be almost blind the next, or may walk pretty well one moment and the next be unable to move from his bed. Symptoms, indeed, supervene suddenly and depart almost equally suddenly. Again, many patients affected with insular sclerosis are very emotional; are easily moved to tears or to laughter, and have tremulous voices—in a word, present just those features characteristic of a so-called “hysterical manner.” In this connection it is well to bear in mind Buzzard’s words. “In a case,” wrote Buzzard, “in the history of which paresis has occurred in one or more limbs with spontaneous recovery and repeated recurrence of the symptoms in the same or another part, together with a history of amblyopia, either temporary or persistent, my experience would lead me to diagnose insular sclerosis in the absence even of the symptoms first enumerated.” One sign, namely, the Babinski reflex, is now and then present when all other symptoms are absent. An extensor response upon stimulation of the sole of the foot is conclusive evidence that the fibres of the pyramidal tract are involved at some point.

REVIEWS.

A German-English Dictionary of Terms used in Medicine, and the Allied Sciences. By the late HUGO LANG, B.A., and BERTRAM ABRAHAMS, M.B., B.Sc., F.R.C.P. London: J. and A. CHURCHILL, 1905. Price 15s.

A long-felt want has at last been supplied by the publication of Lang’s German-English Dictionary of medical terms, revised and enlarged by Dr. Bertram Abrahams. Several have purported to aid members of the various scientific professions in their researches into German scientific literature; but, up to the present, they have proved themselves broken reeds of a peculiarly exasperating quality. Now, however, we turn with relief and satisfaction to the shelf to take down with confidence the Lang-Abrahams glossary, knowing that we shall there find the word we seek explained in fit and technical language. Particular care has been given to diseases, etc., to which German personal names have been applied, as well as to questions of gender, while the editing has been carried out with great exactitude. In addition,

the book is well and clearly printed. In many studies a hearty welcome awaits this new arrival in the literary field. Its success is assured.

New Findings in Ophthalmology and Otology. By E. H. HAZEN, M.D., Des Moines, Iowa, U.S.A. Small 8vo., pp. 87 and index. E. H. HAZEN, M.D., Des Moines, Iowa, U.S.A.

As the result of an examination of more than five hundred students, ranging from ten to sixteen years of age, for the conditions leading to eye strain, the author has found as many, if not more, subjects whose asthenopia was dependent upon faults of the exterior ocular muscles, than upon errors of refraction.

This type of muscular asthenopia, he believes, is caused by a derangement of nervous energy rather than by any fault of anatomic construction. For its permanent relief, he has recourse to an instrument which is designated as a Kratometer (a measure of strength). The apparatus has been constructed upon the principles of steadiness and smooth manipulation along straight lines. It is made so as to carry a series of prisms in successive jerks, which plan he believes serves to stimulate the muscles to their best powers. The mechanism is so arranged that exact axes and proper horizontal and vertical levels are obtained through apertures made just sufficiently large to prevent the head of the patient from leaving the so-called primary position.

In the author's hands cure has been obtained by this contrivance in very brief periods of time. He cites a number of interesting confirmative cases.

C. A. O.

The Relation of the Cervical Sympathetic to the Eye.—

Papers read before the Section on Ophthalmology of the American Medical Association at the Annual Session, New Orleans, May, 1903. "The Physiology of the Sympathetic in relation to the Eye." G. E. DE SCHWENITZ, A.M., M.D., Philadelphia. "The Influence of Resection of the Cervical Sympathetic Ganglia in Glaucoma." WILLIAM H. WILDER, M.D., Chicago. "Influence of Resection of the Cervical Sympathetic in Optic-Nerve Atrophy, Hydrophthalmos and Exophthalmic Goitre." JAMES MOORES BALL, M.D., St. Louis. "Pathology of the Cervical Sympathetic." JOHN E. WEEKS, M.D., New York. Chicago: Press of American Medical Association, 103, Dearborn Avenue, 1904.

These collected papers give an account of the facts with regard to the cervical sympathetic which are of interest to ophthalmologists, together with records of the results of a large number of sympathectomies which have been performed by American surgeons for the relief of various ocular conditions.

The first paper by de Schweinitz contains a *résumé* of the anatomy of the sympathetic, its distribution to the eye, its

relation to the lacrymal secretion, the movements of the iris, accommodation and refraction, and intra-ocular tension. The ocular phenomena which follow galvanization or faradization of the sympathetic and the nature of the ciliary ganglion with special reference to its relation to the sympathetic system and the eye are also discussed, and a very complete summary is given of the conclusions drawn.

Wilder's article gives complete histories of seven cases of sympathectomy for glaucoma under his own care, illustrated by twenty-five charts of the visual field and three figures representing the microscopic appearances seen in sections of excised ganglia. It also contains more or less complete histories of sixty-one cases of excision of the superior ganglion for glaucoma recorded by other American ophthalmic surgeons. From an examination of these and a comparison with other published statistics he comes to the conclusion that although many of the results obtained are unsatisfactory, there are some brilliant ones which show that the operation is not one to be condemned too hastily.

Ball records the effects of sympathectomy in optic atrophy, hydrophthalmos, and exophthalmic goitre, and gives a *résumé* of the various surgical procedures suggested for the relief of the last-named disease.

Weeks deals with the normal microscopic anatomy of the cervical sympathetic and the pathological changes seen in sections of a number of ganglia removed for the cure of glaucoma, exophthalmic goitre, and various pathological conditions affecting the system locally or generally. He comes to the conclusion that the evidence in our possession is not sufficiently conclusive to enable us to establish or to exclude any constant in the cervical sympathetic peculiar to glaucoma.

The book is nicely got up, and will, no doubt, prove of value to those who wish for information on a subject which, although of considerable interest to ophthalmic surgeons, is imperfectly dealt with in the ordinary text-books.

The Chief Operations of Ophthalmic Surgery. By HAROLD B. GRIMSDALE, M.B., B.C., F.R.C.S., assistant ophthalmic surgeon to St. George's Hospital, and surgeon to the Royal Westminster Ophthalmic Hospital. London: THE MEDICAL TIMES, LIMITED, 11, Adam Street, Strand, W.C. 1904. Price 5s.

Until the other day, when Mr. H. B. Grimsdale published this unpretentious little book, there was no special treatise in the English language dealing with operations upon the eye. This was the more curious, seeing that abroad there are several special books of the kind, such as Czermak's *Augenärztlichen Operationen*,

Terrien's *Chirurgie de l'Œil*, and Haab's *Augen-Operationslehre*, of which an English translation is, by the way, announced. Let us then at once admit that Mr. Grimsdale has managed to fill a vacant niche. The book is elementary, and does not profess to give "a complete account of all ophthalmic operations." Although its statements are trustworthy, yet the book leaves something to be desired as regards both its illustrations and its phraseology. Still, it represents a praiseworthy attempt to describe the chief operations of eye surgery, and, as such, calls for nothing but praise. Its author, besides, shows a considerable familiarity with the literature of the subject, British and foreign, as uncommon in this country as it is commendable. We venture to express the hope that Mr. Grimsdale will produce a more advanced treatise. Print should be improved; matter be amplified; and illustrations be multiplied in the new version we propose to ourselves. In short, Mr. Grimsdale should produce a work worthy of himself and of the best traditions of British ophthalmic surgery. Above all things, let him avoid such constructions as, "But when we come to the later results we do not find so complete satisfaction" (p. 63), "The incision will vary a little in making with the knife chosen" (p. 93), "It is not common for the iris to prolapse, though this accident occasionally occurs" (p. 94), "There are several ways of performance" "Though its description may read slightly complex" and that uncouth phrase, culled we know not where, "the corneal limb" (p. 139).

Ueber die Körnerkrankheit. On trachoma. By J. HIRSCHBERG. Aus dem *Klinischen Jahrbuch*, Bd. XIII, Jena, 1904.

Professor Hirschberg undertook, in the course of a lecture delivered before general practitioners, to discuss a disease of the eyes, which in some parts of Germany prevails to such a degree as to constitute a veritable scourge. His audience must have gained most useful knowledge from listening to him. The ophthalmic surgeon, however, will hardly find anything new or striking in the pamphlet. How could it be otherwise, as long as a lecturer on trachoma is unable to dispel the last uncertainty of diagnosis by announcing the discovery of the long-wished-for micro-organism or by strengthening our therapeutical arsenal by the addition of a specific remedy? On the other hand, these very gaps of our knowledge allow much—perhaps too much—scope for personal opinion. I will, therefore, in reviewing this brochure, insist on a few characteristic points. As might be expected, the author enters thoroughly into the historical aspect of the disease. We hear that trachoma, or granular disease, was common in antiquity among Egyptians, Greeks, and Romans, and that indeed most of our modern remedies, medicinal and surgical, were used in some form by the ancients. Then follows a reference to the

epidemic of ophthalmia which swept over Europe after Bonaparte's expedition to Egypt. Such a reference seems to be inevitable in any treatise on trachoma, and yet a great deal of confusion, as is evident from the promiscuous use of the name "Egyptian ophthalmia," is due to the mistaken identification of both diseases. Hirschberg asserts that trachoma was found in Europe before the Egyptian campaign. Moreover, it is quite certain that the ophthalmia which spread through Europe at the beginning of the last century, was not a pure epidemic of trachoma, but very likely it was in many cases caused by gonococci, Koch-Weeks' bacilli, etc. It need only be remembered how commonly other forms of conjunctivitis—often more contagious than trachoma itself—are found grafted upon it. All the discovered "bacilli and cocci of trachoma" are the germs only of such a secondary conjunctivitis.

Hirschberg recognises acute trachoma as one form of the disease. This view, which is widely held, appears to be insufficiently proved, and is perhaps partly based on the old idea that the acute ophthalmia of the Napoleonic era was an epidemic of trachoma—surely a further reason for avoiding any reference to that incident in connection with trachoma! In a case which looks like acute trachoma it must always be difficult to exclude the possibility of a secondary acute catarrh being established on the top of a trachoma that had previously given rise to no special symptoms. It is an undisputed fact, that follicles exist in a large percentage of school children without causing any symptoms (Stephenson and others). Although these follicles are rightly regarded by Hirschberg as a condition entirely distinct from trachoma, both diseases have *inter alia* this common feature, namely, that their presence is not necessarily marked by any outward sign of inflammation. Indeed, I think an examination of children, including infants, who live in regions where trachoma is endemic, would show, how early in life the disease commonly begins and would reveal the frequent existence of the affection in apparently healthy eyes. The conception of trachoma as possibly an acute disease, is responsible for the panic among the public on the occasion of an outbreak of acute ophthalmia among school children: the first thing usually thought of is trachoma, whereas it should be the last.

Hirschberg regards trachoma, to put it shortly, as unconditionally infectious, and attributes little or no importance to climatic and racial peculiarities in the etiology of the disease. In poverty, with its concomitants, he sees only factors which facilitate the transmission of the contagion from person to person, and nothing more. Such a view, of course, does not explain the geographical distribution of trachoma.

As to treatment, Hirschberg is more in favour of "expression"

than excision, and prefers the 1% solution of silver nitrate to the silver preparations of modern invention. Amongst recent remedies he has a good word for the 5% ointment of cuprocitrol and Römer-Merck's jequiritol. With this many will agree. To combat the disease systematically in the eastern provinces, the Prussian Government contributes an annual sum of £17,000. Attention has so far been chiefly directed to school children and, as Hirschberg remarks, the money has not been spent in vain. Progress would perhaps be accelerated if, as suggested above, this systematic examination and supervision were extended to children of all ages.

C. MARKUS.

NOTES AND ECHOES.

News Items

WE are glad to announce the appearance of a new journal of ophthalmology, *La Rivista Italiana di Ottalmologia*, published at Rome by Professor O. Parisotti. Dr. Lobanow has been appointed Professor of Ophthalmology at Tomsk, Russia. Dr. Sachsälber has been nominated Extraordinary Professor of Ophthalmology in Gratz. Dr. Edward Roberts, surgeon to the Manchester Eye Hospital, has been appointed High Sheriff for his native County of Cardigan.

* * * *

Deaths.

READERS will learn with infinite regret that an eminent Parisian ophthalmic surgeon in the person of Dr. Parinaud has recently passed away, aged 60 years. He was a scientific investigator of the first rank. His work upon "Hysterical Affections of the Eyes, Strabismus, and Septic Conjunctivitis" has become classical.

Dr. A. Chodin, of Kieff, for many years editor of the *Westnik Oftalmologii*, has died at the age of 58 years. Professor J. Hjort, of Christiania, died on March 9th, 1905, aged 70 years. Dr. Wilhelm Schulek, late professor of ophthalmology in Budapest, died on March 14th, 1905, at the age of 62 years.

* * * *

Trachoma Prize.

THE prize of two thousand crowns offered by the Hungarian Minister of the Interior for the best essay on the pathology and treatment of trachoma will be awarded before long. Twenty essays have been received, namely, one

each from England, Hungary, and Spain, two from Russia, seven from Austria, and eight from Germany. The judges are Professors Schmidt-Rimpler and Hess, and Dr. Grosz.

* * * *

Scientific Meetings.

OUR old friend the *Société française d'Ophtalmologie* will hold its annual congress the 1st, 2nd, 3rd, and 4th of May at the Palais des Sociétés Savantes, Rue Danton, Paris. This year, discussion will be concentrated upon the total correction of myopia, and will be opened by Dr. Bourgeois, of Rheims. There are, besides, fifty-two communications inscribed on the programme. The second annual reunion of the *Sociedad oftalmológica hispano-americana* will take place at Madrid from the 15th to the 18th of May. Communications to be sent to the secretary-general, Dr. Sanz Blanco, Calle de la Montera, 51, Madrid. The Hungarian Ophthalmological Society will meet in Budapest on the 11th and 12th June. The pathology and treatment of trachoma will be discussed on the first day, and on the second cataract operations. The meeting will be held in the *Universitäts-Augenklinik*. The *Ophthalmologische Gesellschaft* will assemble this year at Heidelberg on August 3rd. The programme, as far as at present arranged, is as follows: the Council will meet at 6 p.m. on Wednesday, the 2nd of August, at Professor Leber's house, and an unofficial reception will follow in the Stadtgarten. At 9 a.m. on the 3rd the Society will meet in the University. At noon on that day a vote will be taken as regards the bestowal of the Graefe medal. The afternoon will be devoted to demonstrations, and the evening to dinner at the Town Hall. On August 4th and 5th the Congress will assemble at 9 a.m. for scientific purposes. Communications to be sent to the secretary, Professor A. Wagermann, of Jena, not later than the 30th June. The XVII Italian Ophthalmological Congress will assemble at Naples, the 10th to the 14th October next. We are glad to observe that printed abstracts of the various communications will be distributed to members before the meeting. The communications themselves, together with the discussions, will be published later. Secretary, Dr. de Lieto Vollara, Naples.

**The Optician
Question.**

DR. F. VALK contributes to the February issue of the *Ophthalmic Record* (Chicago) an article upon "The Optician and the Medical Profession." Dr. Valk is inclined to take a conservative view, inasmuch as the existing conditions will not admit of radical views either way. As he points out, we are unable to say "the opticians must not examine the eyes for errors of refraction nor sell glasses to correct them." The writer makes the practical suggestion, in view of impending legislation, that no person can legally advise, sell, or give away, glasses, either refractive or prismatic, to any person whose visual acuity is below normal, *i.e.*, below 20/20, or that can be made normal by the aid of glasses, except those legally authorised to treat pathologic conditions and to take the full responsibility for the same." This compromise—for that is what it amounts to—may possibly furnish the "golden bridge" desired alike by the ophthalmic surgeon and the better-class of bona-fide opticians. Anyhow, it strikes an impartial observer as being in the nature of a moderate and business-like proposal.

* * * *

Literary Etiquette.

LITERARY etiquette may be said to include the moral and good manners of the world of letters. It is the unwritten code that places a wise restraint upon the pen of the too ready writer. A somewhat flagrant infringement of its elementary rules has recently fallen under our notice in the columns of our contemporary, the *Ophthalmic Review*. The March number of that excellent periodical contained what purported to be a review of a paper by Drs. Enslin and Kuwahara on "Suppurative Meningitis as the result of Enucleation," originally published in the *Archiv für Augenheilkunde* for September, 1904 (*see p.* 235 of present issue). The reviewer—almost, but not altogether, an anonymous individual—animadverted upon the position taken up by Mr. C. Devereux Marshall, who, as well known, believes, as the result of his experience, that prompt enucleation is the right and proper way of dealing with a suppurating eyeball. We are not concerned with the advisability or otherwise of taking the "short way" advocated by Mr. Marshall, although there is obviously something to be said in its favour. Indeed, there could be no possible objection to any criticism of the sort, but unfortunately the

reviewer made it appear that such criticism was offered by Drs. Enslin and Kuwahara, whereas, in point of fact, it was evolved from his own inner consciousness. Will it be believed that Mr. Marshall's name is not even mentioned in the text of the paper, and that the only reference to him is to be found in the bibliography attached to the original communication! Whilst not wishing to be captious, we must at the same time protest against reviewing (save the mark!) of this description, which is not only manifestly unfair, but positively misleading to readers unacquainted with the original communication.

* * * *

**Ophthalmology
at Oxford.**

WE are glad to see that the oldest English University shows an inclination to fall into line with the modern progress of scientific medicine. As all the world knows, one of the foremost exponents of medicine in the person of Dr. Osler, of Johns Hopkins University, has recently been appointed Regius Professor of Medicine in the University, despite the influence of an unprogressive section which wished to see that ancient and honourable office handed over to a gentleman whose scientific reputation has not hitherto extended much beyond the boundaries of the University town. It is now announced, as a further sign of grace, that a post-graduate course of ophthalmology will be held during the first two weeks in July, in the newly-created department of ophthalmology belonging to the University. The course has been arranged by Mr. R. W. Doyne, the Reader in Ophthalmology. It will extend over a fortnight or three weeks, and will be limited to thirty members, ladies or gentlemen. Those attending, if they so desire, will be lodged at a nominal sum in Keble College, whose architectual peculiarities will be found on trial to be more than atoned for by the solid creature comfort found within its variegated walls. Special lectures and demonstrations will be given by the following, among other gentlemen:—Messrs. E. Nettleship, R. M. Gunn, W. H. H. Spicer, E. T. Collins, W. A. Frost, E. E. Maddox, Priestley Smith, and S. Stephenson. Those desirous of attending the course should communicate with Mr. Robert W. Doyne, at the department of ophthalmology, Magdalen Street, Oxford. Early application is desirable.

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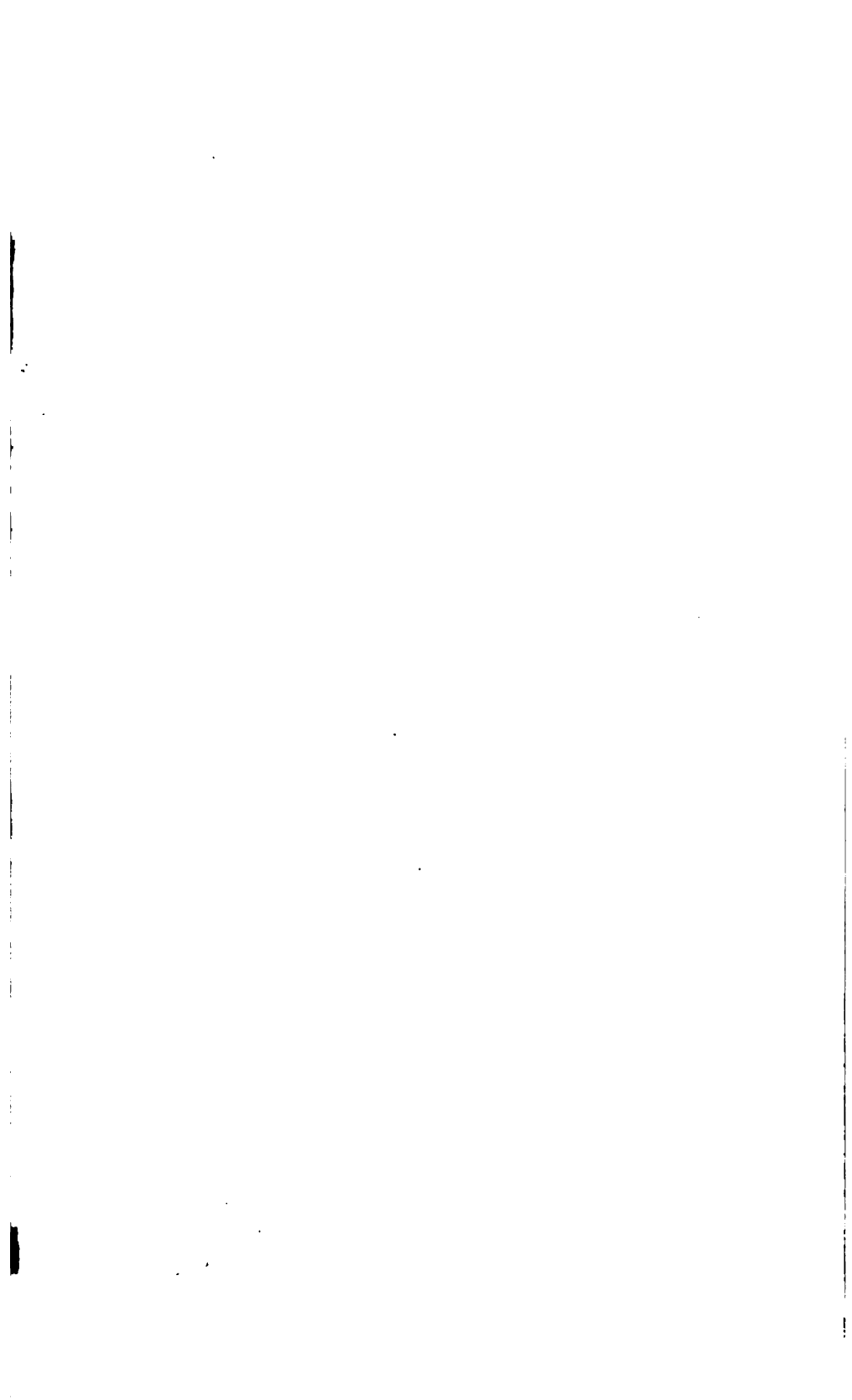
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The Luminous Ophthalmoscope.





To illustrate paper by Drs. Thomson and Buchanan on
"Obstetric Injuries of the Cornea."



Fig. 1.

Case J.—Appearance of the cornea four months after birth, approximately twice natural size. The child was last seen at the end of 1904, when the linear opacity could still easily be made out on dilating the pupil.



Fig. 2.

Case K.—Appearance of the cornea twenty-three days after birth, approximately natural size. It is evident that the interference with vision will be less in this case than in that figured above.

The drawings are by Dr. A. J. Ballantyne, and are reproduced, by permission of Messrs. Rebman, from Jardine's "Clinical Obstetrics." (Second Edition.)

To illustrate Dr. P. J. Hay's article on "Embolism of
the Central Artery of the Retina."

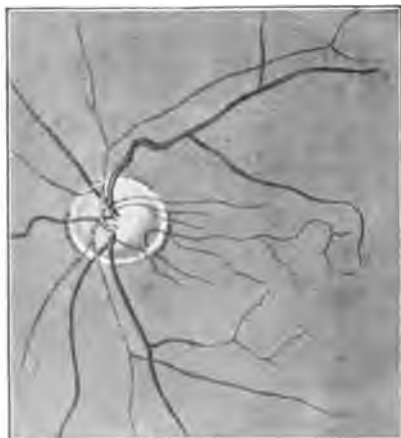


Fig. 3.

THE OPHTHALMOSCOPE.

A MONTHLY REVIEW OF CURRENT OPHTHALMOLOGY.

VOL. III.—No. 6.]

JUNE 1, 1905.

[ONE SHILLING

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ORIGINAL COMMUNICATIONS.

OBSTETRIC INJURIES OF THE CORNEA.

BY

ERNEST THOMSON,
M.A., M.D.,

AND

LESLIE BUCHANAN,
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OPHTHALMIC SURGEON,
GLASGOW MATERNITY HOSPITAL,

SURGEON AND PATHOLOGIST,
GLASGOW EYE INFIRMARY.

It has been the fortune of the writers to meet with a considerable number of cases of obstetric injury to the eye of the new-born child, in the course of a comparatively short period of observation. In a large proportion of these the cornea has been involved in a peculiar manner which appears to be rare in localities other than Glasgow. That this localization is dependent on the frequency of rickets, with marked pelvic deformity and consequent necessity for forced delivery, has been suggested by us already.⁽¹⁾ The scarcity of reported cases and the negation of their occurrence by obstetricians and ophthalmologists practising in other centres, tends to confirm our opinion.

In the *Transactions of the Ophthalmological Society* for the year 1902,^(b) will be found an article by one of us (Thomson) recording three cases of peculiar corneal injury during delivery, the first, so far as we are aware, which had been described in detail, and in the volume for 1903,⁽¹⁾ a more elaborate conjoint paper in which not only corneal, but various other injuries to the eye of the new-born are described, clinically and pathologically.

The series of cases goes on increasing. Most of them occur in the service of the Glasgow Maternity Hospital, an institution in which, probably, more rickety dwarfs are delivered than in any other hospital in the world.

We have now notes—some pretty complete, others incomplete—of nine cases of *corneal* injury in addition to the six already published in 1902 and 1903. We therefore think it wise, in view of the importance of the subject both to the obstetrician and to the ophthalmologist, not to wait for further cases but to publish those we have, even although there is not much to offer in the way of explanation of the mechanism of their occurrence.

To the obstetrician and to the ophthalmologist a knowledge of the possibility of corneal injury at birth is important from different standpoints. The former may find himself held responsible for the injury; the latter may be asked for a prognosis.

In our previous joint paper we dealt with obstetrical eye injuries in general; in this communication we shall deal only with corneal lesions, for, whereas pathological changes in the interior of the globe have frequently been described by others, very little has been noted upon corneal traumatism. Further, as we have already suggested, there is a great probability that the scars left by these corneal injuries at birth may be looked upon as "congenital" leucomata. This is particularly likely to happen in those cases in which all sign of corneal œdema has passed off after a period of a few weeks.

The condition described clinically by Thomson in 1902 under the name of "Traumatic Keratitis of the New-Born" is of two-fold origin and has a two-fold prognosis. This has been amply confirmed by pathological examination and by continued clinical experience. Corneal traumatism is a rare complication of assisted labour, even when only really difficult deliveries are considered. It results from pressure during a prolonged second stage, which pressure is due either to some form of obstruction in the maternal passages, to compression by forceps, or to both factors combined. We may cite a few cases in illustration.

(a) In one case œdema of the cornea was apparently caused by the maternal passages being overfilled from the simultaneous presentation of the head, arm, and cord; no instruments were used. This case illustrates the possibility of the occurrence of

injury *apart from any interference on the part of the obstetrician*, and is worth recording on that account alone. (Case G.)

(b) In the rickety pelvis with marked sacral promontory, the pressure may be severe enough to cause a cranial depression. In at least three cases (C., F., & M.) this was associated with a corneal lesion. In F. the lesion was bilateral, and one eye, that on the side corresponding to the depression, was extruded from the orbit.

(c) Again, in the case L., in which the pelvis was not known to be contracted (the confinement was in a private house), the application of forceps caused laceration of the upper lid and rupture of the posterior elastic lamina of the cornea.

It has been stated that traumatic keratitis has a two-fold origin and prognosis. This depends upon the occurrence or non-occurrence of rupture of the posterior elastic lamina. In our 1903 paper we said that three varieties of corneal change might be distinguished clinically, *viz.* :—

- (a) A diffuse opacity which is temporary,
- (b) A diffuse opacity, indeterminate in position, which is permanent.
- (c) An opacity which takes a linear form, and is permanent.

We now consider that these three forms are, so far as our experience goes, reducible to two, for on further observation (b) has always proved temporary, namely :—

- (1) A diffuse opacity which is temporary,
- (2) A permanent opacity which takes a linear form and passes vertically, obliquely, or horizontally across the whole or a part of the cornea, in a straight or curved manner or concentrically with the limbus (*see* chart). In most cases there is more than one linear opacity.

The first form occurs with comparative frequency, and is undoubtedly due to oedema. It may occur alone or in conjunction with the second form. The second form is due to rupture of the posterior elastic lamina of the cornea and the subsequent formation of fibrous tissue. It is usually associated during the first days or weeks after birth with a general corneal oedema (first form), which may cause a uniform opacity sufficiently marked to mask the appearances due to rupture of the elastic lamina.

While it is certain that the clinical appearances tally with the pathological findings, the exact cause and direction, and the amount of pressure required to produce the lesion, remain doubtful, and this uncertainty is increased in proportion to the ever increasing number of variations of the originally described linear opacity. While most of the ruptures take place approximately vertically, a certain number occur horizontally, obliquely, and so on.

Leaving out of consideration simple œdema, which results in a dotted, interstitial, corneal opacity, passing off in a few hours or days and leaving no trace behind, it is of interest to note the clinical characters of the corneal change in those severe cases in which, owing to scar tissue formation, a more or less permanent opacity results; and to enquire into the pathological findings. We say purposely, "more or less permanent," because we really do not yet know how permanent the opacity is.

Of the cases already published we shall give full details of one, and summarize the remainder. The new cases we shall treat in a similar way, but a little more fully. In all there are fifteen cases in which a linear opacity occurred (or, in the case of still-born children, would have occurred, as shown by the pathological examination). In order that a general idea may be obtained of the clinical course of the corneal change in a typical case, Cases F and J. in this paper, and Case I. in the *Transactions of the Ophthalmological Society*, 1902 (which in the present paper is only summarized as Case B), may be read; for the pathological findings Case A is complete.

CASE A. (Case I. Thomson and Buchanan. *Transactions of the Ophthalmological Society*, 1903.)

Obstetric History.—Nineteen year old primipara, true conjugate, $3\frac{1}{2}$ inches. First and second stages, 24 hours. Child, female, $7\frac{3}{4}$ lbs., could not be got to breathe. Very difficult forceps delivery, vertex presentation. One blade of forceps applied over outer angle of right orbit.

Ophthalmic Account. Right Eye. Anterior chamber full of blood. Cornea very cloudy and showing vertical bands. On horizontal antero-posterior section of eyeball, after washing out the blood from the anterior chamber, there remains a layer of blood on the posterior surface of the cornea, interrupted by four clear bands close together, running approximately vertically across the cornea. These clear bands are due to the absence of the layer of blood. The widest band measures 1 mm. at its middle and tapers above and below; the outer bands are from one-half to one-quarter this width. Microscopically, the four clear bands correspond with gaps due to ruptures of the posterior elastic lamina. The principal rupture, in sections at right angles to its course, shows that the severed ends of the lamina are widely separated, and that, approximately, five layers of the cornea are also ruptured. The torn ends of the lamina are turned forwards and adhere to the corneal structure. The floor of the concavity formed by the retraction of the ruptured corneal lamellæ is smooth, because the ruptured fibres are sealed down by fibrin. There is very little disturbance of neighbouring corneal tissue. The second largest rupture shows destruction of only one corneal layer, and inversion of the ends of the posterior

elastic lamina. The other two ruptures involve the lamina only (see Plate XVII, *Transactions*, 1903).

CASE B.—(Case I. Thomson, *Transactions of the Ophthalmological Society*, 1902.)

Difficult forceps delivery. 9½ lbs. male child. True conjugate 3½ inches. Bruising of R. temple and upper eyelid. R.E. : Cornea hazy at birth due to flocculent opacity; loss of surface polish. Gradual disappearance of corneal haze with development of linear vertical scar. A year later this scar remained distinct.

CHART

Showing the positions of linear opacities in ten cases observed clinically. (Cases observed only pathologically are excluded.)



CASE B.



CASE C.



CASE D.



CASE F.



CASE J.



CASE K.



CASE L.



CASE M.



CASE O.



CASE P.

CASE C.—(Case II. Thomson, *ibid.*)

Very difficult forceps delivery. True conjugate 2¾ inches. Spoon-shaped depression of left frontal bone.

Both corneæ hazy at birth, right more so than left : R. cornea became very opaque all over 13 days later, while L. developed a linear vertical scar. Patient lost sight of.

CASE D.—(Case III. Thomson, *ibid.*)

Difficult forceps delivery. Pelvic measurements not known, marked sacral promontory. Grip of forceps on left temple, and right ear and angle of jaw. Linear, obliquely vertical, opacity of left cornea, first seen 5 weeks after birth.

CASE E.—(Case II. Thomson and Buchanan, *Transactions of the Ophthalmological Society*, 1903.)

Craniotomy, retroversion of lens and vitreous of right eye. Extensive rupture of posterior elastic lamina. Left eye entirely destroyed.

CASE F.—(Case V. Thomson and Buchanan, *ibid.*)

Difficult forceps delivery (symphysiotomy). True conjugate 3 inches. 8½ lbs. child. Spoon-shaped depression over left frontal and parietal bones, left eye extruded from orbit. *Microscopically*, there was a ragged rupture of Descemet's membrane and eight layers of the cornea. R. cornea very hazy at birth. Opacity increased day by day till fourth day, when cornea appeared opaque all over. Subsequently the cornea cleared slowly from the superior nasal to the inferior temporal region. Eleven months after birth there only remained a narrow, crescentic, dense opacity at the lower temporal region of the cornea parallel with the limbus, and eighteen months after birth the opacity could hardly be detected in its position against the light iris background.

Up to this point we have dealt with cases which have already been published.

Of cases not hitherto published we have notes of nine. Seven of these were observed clinically, two came to pathological examination, and one was a stillborn child with bilateral lesions, of which the eyes, unfortunately, were not secured.

CASE G.—Mrs. B——, 31 years, 10-para. Of the nine previous labours one only called for the use of instruments. In the absence of pelvic measurements one may assume from this history that the pelvis is not contracted. The interest of this case lies in the fact that the tenth pregnancy ended fatally for the child, on account of the simultaneous presentation of the face, one arm, and a loop of the cord. The second stage lasted about thirteen hours, and terminated suddenly without instrumental or other assistance. The face of the child presented in a marked degree all the appearances usually observed after a difficult face delivery. There was an abrasion over the ramus of the right lower jaw, which the obstetrician regarded as probably due to the promontory. Both corneæ are stated to have been uniformly opaque.

The right eye was obtained for examination. It was found that there was slight evidence of inflammatory change in the cornea; Descemet's membrane was intact.

CASE H. *Obstetric History*.—Mrs. T——, primipara. C.V., 3 inches. First, second and third stages, 11½ hours. Female

stillborn child, 9½ lbs. Vertex presentation. Forceps delivery in Walcher position. At birth the left eye was displaced forward, and its cornea was hazy. The right eye presented a sharp vertical line almost on the corneal centre. (*Reported by Dr. Jardine.*)

Ophthalmic Account.—The right eye was obtained for examination. The posterior elastic lamina was extensively torn, one margin being coiled upon itself (as in Case E). There was no rupture of true corneal tissue.

CASE J. *Obstetric History.*—Mrs. M——, primipara. C.V., 2¾ inches. First and second stages, 23 hours. Female full-time child, 5½ lbs. Vertex presentation. Difficult forceps delivery. Head very much moulded, no cranial depression. Marks of forceps blade on each frontal bone.

Ophthalmic Account.—Opacity of right cornea was noticed immediately after birth. The case was seen by one of us on the next day, and the following account of its progress is instructive, showing, as it does, the alterations which take place in the appearances of the cornea when observed over a long period. On the day after birth (December 28th, 1903) the right cornea presented a well-marked general opacity, on magnification seen to be made up of closely-packed dots, through which the pupil was visible. In addition, there was an appearance as if horizontally through the centre of the cornea there was a clearer area bounded by two narrow sharp lines. Above and below these lines the opacity seemed uniform. On the 29th the general opacity was more marked, the striped appearance less marked. By January 1st, 1904, the general opacity had become so great as almost to obscure the pupil even with focal illumination, and the striped appearance was entirely masked: corneal surface like ground glass.

On January 4th the general opacity was becoming less and the striping more manifest again. From this date onward the general opacity gradually cleared, leaving two horizontal bands as shown in the sketch made in April, 1904, by Dr. Ballantyne (*see plate, fig. 1*).

On November 12th, 1904, 10½ months after birth, the now strictly linear opacities persisted right across the cornea, and, although hardly visible against the light iris background, became clearly defined on dilating the pupil.

It is worthy of note in this case that the house-surgeon was perfectly certain that both blades of the forceps were over the face.

CASE K. *Obstetric History.*—Mrs. M——, primipara. C.V. normal. First and second stages 36 hours. Male child, 9 lbs. Vertex presentation. Forceps delivery. Forceps mark over left frontal bone extending down to eyebrow.

Ophthalmic Account.—Child was seen by one of us, but not until the sixth day. The left cornea then looked very slightly dull all over; two narrow curved bands ran across it from above downwards, the concavities of the curves facing one another and enclosing the pupil between them. The drawing (*see* plate, fig. 2), was made by Dr. Ballantyne twenty-three days after birth.

CASE L. *Obstetric History.*—Mrs. X—, primipara. C.V. not determined. Occipito-posterior presentation. Difficult forceps delivery.

Ophthalmic Account.—This case occurred in private practice. The child was seen on the sixth day. There was a curved wound of the right upper lid, transverse in position (*i.e.*, parallel with the lid margin), due to the rounded end of the forceps blade. There was a general opacity of the right cornea with a denser zone to the temporal side. Pupil easily visible. No sign of linear opacity. Seventeen days after birth, *i.e.* eleven days after the first observation, three short, sharply-outlined, vertical bands were noticed across the central portion of the cornea, two of them in the same vertical plane near the upper and lower limbus, as if they were the peripheral ends of a complete band, and the third a short distance to the nasal side and central, as if it were the central portion of a complete band (*see* chart). At this date there still remained some general opacity at the temporal side of the cornea.

CASE M. *Obstetric History.*—Mrs. W—, 2-para. Approximate C.V. $3\frac{1}{2}$ inches: marked sacral promontory. Second stage, $2\frac{1}{2}$ hours. Full-time child about 7 lbs. Vertex presentation. Difficult delivery, in the course of which forceps were applied and re-applied. At birth the forceps grasped the head in the bi-temporal diameter, and a fracture of the cranium was produced by the severity of the pressure. The patient was delivered at home, and although the obstetrician looked for corneal opacity he failed to find it, doubtless owing to defective illumination.

Ophthalmic Account.—Three weeks after birth, when the child was first seen by one of us, there were two incomplete linear opacities almost in the same vertical line, one stretching from the limbus above and the other from the limbus below, just to the temporal side of the middle line (*see* chart).

CASE N. *Reported by Dr. R. Jardine.*—Mrs. A., aged 26, 4-para. C.V. $3\frac{1}{8}$ inches. Second stage 5 hours (induction of premature labour). Delivery in the Walcher position with Milne-Murray's axis-traction forceps. Premature child weighed $6\frac{1}{2}$ lbs.; could not be resuscitated.

"The left eye protruded somewhat, and its cornea showed a marked hazy opacity with one fairly well marked band in the vertical axis. The cornea of the right eye had three distinct vertical bands, arranged like barrel staves, and general hazy opacity.

The pressure on the left side of the head had been caused by the promontory while that on the right side had been caused by the blade of the forceps."

It is most unfortunate that owing to extreme pressure of work at the Maternity Hospital the case was not notified to us, and, consequently, these eyes were not obtained for examination.

The following case is one the reference to which was mislaid; but has lately been found. It is interesting because of the fact that the exceptional size of the child's head was probably the main factor in the causation of the corneal rupture.

CASE O. *Obstetric History*.—Mrs. McK——, 2-para. C. V. 4 inches. First and second stages 18 hours. Male child, 7 lbs. Vertex presentation. Difficult forceps delivery in Walcher position. Deep pressure mark, due to forceps, over outer edge of right orbit. Other blade of forceps had pressed on left temple. The biparietal diameter of the head was $4\frac{1}{2}$ in.; other measurements also large.

Ophthalmic Account.—Immediately after birth it was noted by Dr. Jardine that there was blood in the anterior chamber, a general corneal haze, and a double linear opacity. The child was seen by one of us the following day. There was fluid blood in the anterior chamber, a well marked general haze, and a double linear opacity, placed vertically, the two lines being close together and extending from one limbus to the other. Subsequently the general opacity increased, then diminished, the blood gradually became absorbed, and on the tenth day the right hand streak had disappeared, leaving the left-hand one distinct and presenting two minute areas of blood-clot attached to it near its centre. One month after birth the blood had disappeared; the single band of opacity persisted.

The following case came under observation just as this communication was being completed:—

CASE P. *Obstetric History*.—Mrs. K——, primipara. C. V. $2\frac{3}{4}$ inches. Very little pelvic deformity though patient is a dwarf. Labour not very difficult; forceps delivery (Milne-Murray axis traction). Vertex presentation (occipito-anterior). Small wound over right external canthus from forceps blade; other forceps blade over left mastoid. Delivered in ordinary position (*i.e.*, not in Walcher position).

Ophthalmic History.—The obstetrician noted at birth a marked protrusion of the left eye and haziness of left cornea, and a wound at the external canthus of the right eye. He observed that the haziness of the left cornea increased for a few days, so that the pupil was seen with difficulty, and that after that it quickly cleared up. The eye, which had been proptosed at birth, had regained its normal position about the eighth day.

The child was seen by one of us twelve days after birth. The right eye was normal. The left eye was in normal position. There was no sign of conjunctival ecchymosis. The cornea presented a narrow line of opacity obliquely placed from the limbus up and out to the limbus down and in. The band was not easily seen, except with the aid of focal illumination. The cornea was otherwise clear.

The obstetrician is confident that a forceps blade was not in proximity to the left eye, which was proptosed, and also that the sacral promontory was not the cause of the corneal injury.

A study of these new cases—G, H, J, K, L, M, N, O, P—reveals one or two interesting new facts.

In case J we have seen, for the first time, the bands of corneal opacity in a horizontal position. In this case there was much moulding of the head, and the house-surgeon at the Maternity Hospital is positive that a forceps blade lay over each frontal bone. It is, unfortunately, impossible to state with any degree of certainty the exact position of each forceps blade in relation to the orbit. In case N we find, not for the first time certainly, bilateral corneal lesions. In this case, however, they were characterised by unusual symmetry. In case G the temporary corneal œdema had been produced by blocking of a normal pelvis by the head, arm, and cord of the child, altogether apart from any operative measures. If there was sufficient pressure to produce œdema in this case, it is possible that in another case of a similar kind a permanent opacity, due to corneal rupture, might be produced. The point is somewhat important from a medico-legal aspect.

Regarding the line of pressure which causes rupture in any particular direction, we are still unable to offer any definite theory. In a former communication we expressed the opinion that rupture of the posterior elastic lamina, and sometimes of the corneal tissue also, takes place in the meridian of pressure. Now, however, case L appears to upset that theory, because there the line of pressure was almost certainly horizontal, and yet the corneal scars were vertical. In a case still more recent than any described in this communication, the cornea was so pressed upon from above by the forceps blade that at birth the vertical was decidedly less than the horizontal diameter, yet a vertical rupture-opacity occurred. Severe ulceration of the upper part of the cornea was also produced.

This inability to determine the precise mechanism whereby corneal rupture is brought about may depend on insufficient knowledge of the factors in that mechanism. The particular shape of the pelvis (flat, rickety pelvis), with consequent head-moulding is almost certainly one such factor. It is conceivable that the position usually chosen for delivery (Walcher position

with legs hanging over the table), or the particular forceps employed, may be other factors. That the pressures exerted upon the child's head during forced delivery are probably very complex is illustrated by our case P, and also by another which occurred in the practice of an obstetrician of our acquaintance. He informs us that in the case of a woman with a markedly rickety pelvis, the child's eye was extruded from the orbit, on the side opposite to that which had been pressed upon by the promontory; indeed this pressure had been so severe that a cranial depression was produced on that side (the side opposite the extruded eye).

The uniformity of the clinical course of these cases is perhaps deserving of remark. In nearly every instance the progress of the corneal change is almost identical with that described in connection with the earlier cases, namely, (1) general haze with indication of striping; (2) increase of the general opacity, sometimes to an absolutely impenetrable degree, and often obscuring the striping; (3) gradual diminution of the former, which is due to œdema, and increased visibility of the latter, which is due to scar tissue. The ophthalmologist should remember that if he sees the case early the eye will probably look worse before it begins to mend, whereas if he sees it late it is probably on the mend in so far as the general opacity is concerned.

Regarding prognosis, evidence is gradually accumulating that the persistence of these corneal scars, or at any rate of their effect on vision, is very considerable. Case D, a boy now aged $3\frac{1}{2}$ years, has been recently examined. The opacity still persists, but requires focal illumination to render it visible. A girl of 12 years was seen just the other day by one of us at the out-patient department of the Glasgow Eye Infirmary. She came complaining of defective vision. Examination by the ophthalmoscope with +12D. behind the mirror showed appearances at once suggestive of birth injury. Investigation of the obstetric history clearly corroborated this. Truc's case⁸ may also be referred to, where a girl of 12 years had 4D. of astigmatism as the result of traumatism at birth. It is evident that there are two points of prognostic importance to be determined, namely, the permanence of visible scars, and their effect on vision. It is manifest that the opacities become indistinct in course of years, and it must be remembered that one which has become almost invisible may still give rise to much distortion of the corneal curvature and consequent astigmatism.

The last word which we would say at present is that in all probability we are very far from the end of our observations of such lesions, and of their effects on adult vision. They will be found to account for a certain proportion of cases of corneal astigmatism (especially monocular) of high

degree. It seems almost certain that in course of time we shall hear of a greater number of such corneal birth injuries and their sequelæ from Great Britain and from other countries.

Postscript.—Since the foregoing paper was completed our attention has been called to Communications by Sidler-Huguenin⁽⁴⁾ and by Sydney Stephenson⁽⁵⁾. These are of much interest in several respects.

Sidler-Huguenin has seen one case in which the linear corneal scar was horizontally placed. This position is evidently very unusual, and the author, like ourselves, finds it difficult to explain it as the result of forceps pressure on the eyeball. We observe that he has not had an opportunity of making sections of a cornea which had been injured at birth. It is somewhat remarkable that Sidler-Huguenin considers the prognosis in cases of corneal lesion to be good without reservation, and yet quotes a case in which linear opacities were visible after $3\frac{1}{2}$ years.

From the prognostic standpoint one of Stephenson's cases is most interesting. The patient was a girl of 12 years, whose birth-history presented every probability of traumatic eye lesion, and who had some faint corneal opacities and much irregular astigmatism (best corrected V. = $\frac{1}{14}$), showing that the prognosis must be quite guarded. This case, and also that of the other child of 12 years which we have mentioned as within our own experience, prove that a cornea which seems normal on casual inspection may yet, on careful examination, reveal evidences of an injury which has given rise to marked astigmatism.

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NEW CONQUESTS OF OCULAR THERAPEUTICS.

BY

DR. A. DARIER,
OF PARIS, FRANCE.*(Continued from page 122.)***Analgesic Action of Radium and of the Radio-Active Substances.**

When we make a *résumé* of the effects produced by radium upon living creatures, under very high tensions, 100,000 U. minimum,* we observe a destructive, caustic, local action, the effects of which are longer in making their appearance, in inverse proportion to the length of time to which the patient has been exposed to its influence, and also when the patient has reached a state of full development. In the same manner the effects of radium are retarded by a less direct application, and are modified according to the nature of the envelope which is used, which may be less transparent, and more difficult to penetrate, such as lead, glass, celluloid, etc.

Under the application of very high tensions (commencing with 300,000 U.), the radium being enclosed in an envelope of india-rubber, there may be observed an immediate reaction of the skin—in a few minutes only (Bohn, Mme. Curie, Danysz).

But it must not be forgotten that the anatomical elements which are first affected are those cells which are periodically renewed, the epithelia, the endothelia, vascular or otherwise, and this applies even in a higher degree to the neoplastic cells whose evolution is rapid and imperfect. These are what we might term the toxic, caustic, and dangerous activities of radium, the use of which in medicine, or, rather, in surgery, should be reserved solely for special cases. For instance, when it is necessary to destroy a large, inoperable tumour, lying at some distance from any nerve-centre—*e.g.*, a tumour in the breast or in the abdomen, or in one of the limbs—would it not be logical to try the saturation of the neoplastic mass with repeated and intensified applications of radium in a high state of activity, as was formerly practised on tumours of the breast by the insertion of needles smeared with arsenical or other paste? An experiment of this kind has just been mentioned by MacIntyre, of Glasgow, who plunged deeply into an extensive tumour a platinum tube containing radium.

Already, a number of small cutaneous tumours, even those on the face and eyelids, have been treated by simple applications of short duration, without any complication having to be recorded, either of the vision or of the nervous system, and quite a number of cures have been reported by these means.

*One might term U. (Urania) the unity of the radio-activity of uranium.

Similar activities of 300,000 to 500,000 U. and upwards have been observed to produce, in the case of small animals, a profound siderative action upon the central nervous system, on the brain and spinal marrow, probably by its primary action upon the vascular endothelia; for Bohn and Danysz have always found, by anatomical examination, certain injuries to the brain and medulla, also vascular ruptures and hæmorrhage, which have destroyed the nervous elements.

It is also very probable that, in the cutaneous injuries produced by radium, the vascular alterations are of the highest importance; but the peripheral extremities of the nerves must also be affected in relation to their functions. We shall now adduce proof for this by studying the analgesic action of radium, an action which, as I believe, I was the first to remove from the region of doubt (*Academy of Medicine*, 4th October, 1903).

Beside the destructive and siderative effects of the active property of radium at high tension, entirely different results may be obtained if one knows how to apply it in small doses—in doses exactly proportioned to the requirements of the individual organism to which it is desired to apply it—that is to say, in handy or medicinal doses of radium.

We have seen that an amount of exposure which would effect the destruction of the hair and of the dermis in the case of a guinea-pig, merely stimulates the growth of the hair in the rabbit (Danysz). It is, therefore, evident that the same exposure which destroys certain badly-protected cells, stimulates others to such a degree as to provoke the hatching of eggs which have not been fertilized. Young and neoplastic cells are destroyed before sound, well-developed tissue, and insects or their larvæ are killed or arrested in their development, and, on the other hand, others are developed into monstrosities. It is a question of dosing and opportunity. We have seen what a deep and violent action is exercised, by high-tension radium, upon the brain and spinal cord of little mice, especially when they are very young; but in order to get the same result with the rabbit, it is necessary first of all to trephine the cranium and the spine. In the case of dogs, after trephining, the action is even less marked. In man no paralytic or tetanic accident has been observed to follow applications of radium. So far as I know, no attempt or experiment had been made as to the medical action of radium before the first note published by myself, and when I communicated to Professor Becquerel some therapeutical results which I had obtained in the treatment of ocular neuralgia, and certain headaches, he could not forbear to exclaim that it was an extremely dangerous thing to apply so destructive an agent as radium in close proximity to such a sensitive organ as the brain. But, in medicine, are we not accustomed to administer

successfully medicaments which are far more dangerous, such as strychnine, atropine, digitaline, etc., and was not M. Becquerel the first to recommend the use of radium for lupus, which is most frequently found in the face? Now, I have been applying radium to the eyes, forehead, temples, and face for more than a year, and have observed no complication whatsoever. In two cases where applications of 1,000 and 10,000 U. had been made to the back of the neck, the patients complained of a sensation of giddiness, and this is the only mishap (and it is a very slight one) which I have had to lay to the charge of radium. Nevertheless, it is necessary to act with caution, when applying fairly high tension in the region of the co-ordinative centres of the medulla oblongata. On the other hand, I have had the opportunity of observing some extremely interesting and favourable effects produced by the application of medicinal doses of the weak radio-active salts, but over a small extent of surface, and the applications being prolonged all the more when the substance has been less active.

The first phenomenon which struck me was their powerful and unsought inhibitive action upon pain, an action which I was afterwards able to reproduce, so to speak, at will, upon the same individual, when the pain returned after the lapse of two or three days; and, secondly, I was impressed with their inhibitive action upon certain forms of neurotic, convulsive epilepsy, also in cases of neurasthenia. But let us not anticipate. Starting with the idea that Becquerel's rays, like the X-rays, had a powerful action upon the neo-cells, and the imperfectly organised tissues, it occurred to me to endeavour to resolve, to melt, and to resorb a *traumatic intra-ocular hæmorrhage*, by applications of radio-active substances to the eyeball and to the temple. A packet containing 1 gramme of radium salt of 240 U., simply wrapped in thin paper, was applied to the eye, and another packet was applied to the external lateral portion of the orbit, the whole being kept in position for twenty-four hours by a gauze bandage. This hæmorrhage was not due to an affection of the vessels, but to an injury sustained by the eye, which for a month had resisted our therapeutic attempts. Sight rapidly improved with the first application of radium, the blood was resorbed, and the fear of exposure to light, as well as the pain which the patient had suffered in the eye, disappeared; but in the first instance I did not attach much importance to the disappearance of the painful element, all my attention being directed to the clarification of the vision, which I was inclined to attribute to the resolvent action of Becquerel's rays upon the extravasated blood.

In a second case of diffuse hæmorrhage of the vitreous body, which had made its appearance without any appreciable cause, and which had entailed a complete loss of the eye-sight, I prescribed the classic treatment, in particular iodide of sodium.

After two months of unsuccessful treatment by these means, I made applications of radium at 240 U. for a week. The immediate result being *nil*, the iodide of sodium was again resorted to, and in the course of a few days the sight was considerably improved, and to such an extent that in one month the vision had returned to almost its normal state. Now the question arises, did the radium, whose long-delayed action is well known, count for anything in the rapid resorption of the effusion? It would be scarcely scientific to assert this.

In a third case the hæmorrhage remained purely retinal in character. This was a lady who for some years had been a sufferer from epileptic attacks, sometimes violent, sometimes slight, the nature of which left no doubt in the mind of the medical man. It was after a severe attack, accompanied by loss of consciousness and blood-tinged foam on the lips, that I noticed the first retinal hæmorrhage in July, 1903. Notwithstanding treatment with potassium bromide, sodium chloride, etc., continued for three months at the seaside, there was no improvement: on the contrary, the vitreous body was half filled with blood, and the vision was reduced to $1/15$. The idea then occurred to me to make applications of radium as above: two packets of 1 gramme each at 240 U. during twenty hours each day, and during three hours applications of a tube at (of) 7,000 U. A fortnight's course of this treatment made no difference to the eye, but the patient expressed to me her great surprise at being entirely delivered from the epileptic attacks which had regularly occurred three or four times a week. These attacks had come after a great nervous shock. There did not appear to be any hereditary neurosis in the family. This sudden cure would be incomprehensible if the case had been one of essential epilepsy, and all the more so as eighteen months have now passed, and the cure remains an established fact. The intra-ocular hæmorrhage has not been repeated, and the vision is gradually improving.

(To be concluded.)

EMBOLISM OF THE CENTRAL ARTERY OF THE RETINA. RETENTION OF NORMAL VISION.

BY

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Ophthalmic literature is rich in cases of embolism of the central artery. The following one, however, is of exceptional interest, in view of the fact that the patient retained normal vision.

Alice J. is a woman of medium height, aged 43, and unmarried. Cyanosed lips, enlarged venules of the cheeks, and marked breathlessness on exertion suggest an impaired circulation. When a child of three she had typhoid fever, and a few years later scarlet, followed by rheumatic fever. These illnesses had a very detrimental effect upon her heart, as evidenced now by great dilatation of the left ventricle and valvular disease both of the aortic and mitral valves.

She first came to the Eye Hospital, Birmingham, in January, 1899. Six years before she had had an attack of blindness in the left eye, which passed off without leaving any untoward effects.

In 1899 she complained of severe supraorbital pain over the left eye. This was said to be most severe at the menstrual periods, but the menstrual functions appeared to be normal. Vision of both eyes was 6/6. The pupil reflexes were normal. The right field of vision was full, but the left one was markedly contracted, and limited to an area extending from the macula to the disc. Upon ophthalmoscopic examination the fundus presented a peculiar appearance. The whole of the fundus was œdematous with the exception of the papillo-macular region. Around the latter there was a fringe of numerous fairly large hæmorrhages. The central artery was contracted.

The fundus gradually resumed its normal appearance, except that the disc paled a little and the arteries seemed slightly contracted. Vision continued to be 6/6. The supraorbital pain subsided.

As will be seen from the accompanying sketch (plate, fig. 3), the retention of such good vision was due to the presence of a cilio-retinal artery. The macular region received the whole of its blood supply from the branches of this vessel, and so escaped the effects of the obstruction in the central artery. It is interesting to note that the yellow spot occupies a much lower position than usual. Thus, the area towards the disc extends in an upward and inward direction, and the field of vision therefore correspondingly downwards and outwards from the point of fixation.

Miss J. continued to visit the hospital frequently till 1901, and then was absent for two years. On January 20th, 1903, she came

again. She complained that she had had an attack of dimness of sight in the right eye on the previous day, which had lasted several hours, and during which she was unable to see a gas light. She was menstruating at the time.

Upon examination R.V. was 6/12 partly, L.V. 6/6. The right field was full, the left one contracted as before. The right fundus did not present anything abnormal.

The patient regained full vision in the right eye in three weeks, and to-day she still sees 6/6 with *both* eyes. She complains occasionally of slight attacks of dimness of vision.

I am indebted to Mr. Henry Eales for permission to publish this case.

CLINICAL MEMORANDA.

CORRECTION OF ASTIGMATISM BY TILTING LENSES.

BY

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After extraction of a cataractous lens there is usually found to be a considerable amount of astigmatism, against the rule. Now, hospital patients often object to the cost of cylindrical glasses, and to them it is a great advantage to obtain the cylindrical effect by tilting the simple biconvex lens downwards. For instance, a + 10D. lens inclined 24° downwards, as for reading, is almost exactly equivalent to a + 10.5D. sph. $\odot$ + 2D. cyl. ax. $-^\circ$, and it also has the advantage of being much lighter than the compound lens.

If V_1 and V_2 represent the distances of the lens from the first and second focal lines respectively, the incident light being supposed to consist of parallel rays, the relation is given by the formula—

$$\frac{\cos^2 \phi}{V_1} = \frac{1}{V_2} = \frac{\sin(\phi - \phi^1)}{\sin \phi^1} \left(\frac{1}{r_1} - \frac{1}{r_2} \right)$$

The table below gives the spherical and cylindrical effect of a + 10D. lens tilted in this way through various angles, as calculated by this formula. Tilting a + 15D. lens an angle of 25° will produce the effect of + 16D. $\odot$ nearly + 3.5D. cyl. ax. $-^\circ$, *i.e.*, half as much again as the values for + 10D.

I have frequently made use of this method for hospital patients with great success. When the astigmatism becomes less, as is so frequently the case some time after the operation, bending the legs of the spectacles upwards will diminish the obliquity of the glass, and so diminish the cylindrical effect pro-

duced. Precisely the same method may be used for correcting high myopia with a slight amount of astigmatism. For instance, a -12D. lens inclined 20° will be equivalent to a -12.48D. sph. $\ominus -1.65\text{D. cyl. ax. } -^\circ$, which are the given numbers multiplied by 1.2. The numbers given are correct to the last decimal place, but practically the last two decimal places may be neglected.

Obliquity of Lens.	Spherical Equivalent.	Cylindrical Equivalent Axis Horizontal.
10°	10.0995	3179
15°	10.2558	7039
20°	10.4027	1.3781
25°	10.6893	2.3246
30°	10.9361	3.6454
35°	11.2974	5.5390
40°	11.7295	8.2586

In aphakia, this method is only suggested for economical reasons, as a much better periscopic effect is produced by ordering a spherocylinder with the cylindrical surface facing the eye.

A FATAL CASE OF EXOPHTHALMIC GOITRE IN A CHILD.*

BY

C. BATCHELOR.

The patient was the only child of healthy parents, in a good position of life. No family history of insanity or neuroses. Perfectly healthy until she had whooping cough in the early months of 1901. In June of that year, at the age of 3 years and 1 month, it was noticed that her eyes were prominent, and she had attacks of passion, which had never been pronounced before.

On her return from the seaside in September, 1901, I found that she had very definite exophthalmos, with decided enlargement of the thyroid, the right lobe of which was larger than the left. There were no tremors, but the heart's action was rapid, and the attacks of passion, with loud screaming, were much more frequent.

In January, 1902, she was seen by Sir Thomas Barlow, who expressed himself as much interested in the case.

In March, 1902, she had an attack of influenza and pneumonia, and for several days was in a most critical condition.

* A paper read on April 14th, 1905, before *The Society for the Study of Disease in Children*.

During the summer of 1902 the exophthalmos became even more pronounced, and a photograph, from a group taken in August, at the age of 4 years and 3 months, shows the condition in a marked degree.

The child was generally breathless on exertion, and the heart's action always rapid (120-140 per minute), with marked pulsation of the carotids, but there were no murmurs, and never albuminuria. The prominence of the eyes varied slightly from time to time, but the eyelids always closed during sleep. Von Gräfe's sign was present. I was never able to discover any tremors.

During 1904 she had two or three attacks of vomiting, which produced great prostration, and on September 24th she was attacked with diarrhoea, followed by uncontrollable vomiting, and she died from exhaustion on September 26th, 1904, at the age of 6 years and 4 months.*

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

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(Third Notice.)

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 - (3a) Rabitsch, F.—A contribution to the study of intra-epithelial cysts of the Uvea. (Ein Beitrag zur Kenntniss den interepithelialen Uvealcysten.) *Centralb. f. prak. Augenheilkunde*, November, 1904.
 - (4) Werner, L.—Dermo-lipoma of the conjunctiva. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 216.
 - (5) Mayou, M. S.—The pathological anatomy of the plaques in epithelial xerosis. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 9.

* For abstracts of recent cases of Exophthalmic Goitre in children, see p. 296.—
EDITORS.

- (6) Schnandigl, Otto.—Cavernous degeneration of the optic nerve. (*Die Kavernöse Sehnervenentartung.*) *Graefe's Archiv f. Ophthalmologie*, 59, 2, 11 Oktober, 1904.
- (7) Lotine.—A case of primary melanosarcoma of the eyelid. (*Sloutshai perwitshnoi melanosarcomi wieka.*) *Rousski Wratsk*, No. 28, 1903, and *Rev. générale d'ophthal.*, 30 novembre, 1904.

(1) The subject of this paper, a woman, 45 years of age, presented a tumour involving the entire right upper lid. Two years previously two small growths had been removed; soon after which "small lumps," which developed gradually, appeared on the top of the lid, finally coalescing and involving the whole lid. When first seen by Mills the growth was $1\frac{1}{2}$ inches long; its vertical width was $1\frac{1}{2}$ inches, and its thickness equalled $\frac{1}{4}$ inch. It was hard and nodular, its surface being glossy in places and in other parts, shrunken. The conjunctiva at different points was excavated, nodular, and indurated. The cornea presented the appearance of trachomatous pannus. Three months later there was enlargement of the preauricular and cervical glands; the patient then consented to removal of the whole eyelid. Pathological examination resulted in a diagnosis of carcinoma of the Meibomian glands. At a later date a partial removal of the enlarged glands was effected.

F. W. MARLOW.

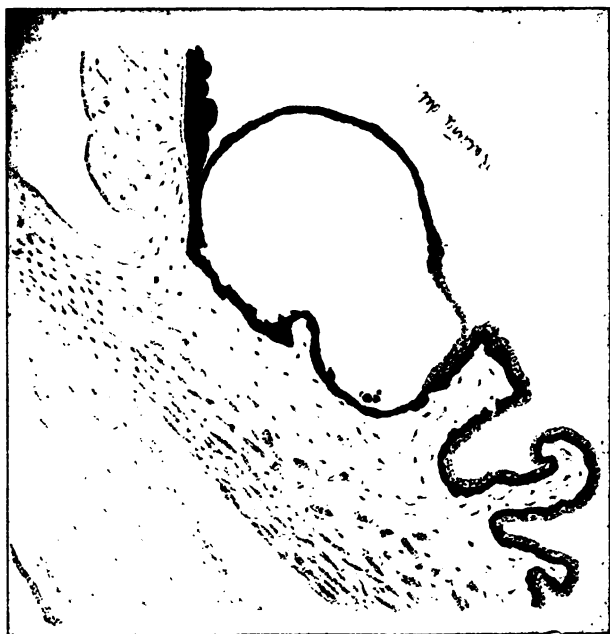
(2) Wehrli describes the histological changes in the brain in a case of sudden cortical blindness with loss of the visual and space memory, in which the central vision remained definitely extinct. In the hemispheres there were symmetrical zones of softening in the fissura calcarina, the cuneus, and the gyrus lingualis and occipito temporalis; it appeared to the naked eye as though the changes were limited to the cortex of this region. But the microscope revealed primary as well as secondary degeneration in the underlying white matter, the optic radiation, the inferior longitudinal fasciculus, and the tapetum. The nerve cells of both external geniculate bodies showed extensive atrophy, whereas the optic tract, nerve, and retina were found intact. The unexpected presence of primary degeneration in the white matter, together with the changes in the cortex, shows that the term "cortical" hemianopsia must not be taken literally.

C. MARKUS.

(3) A woman, aged 54 years, presented a fleshy mass, of greenish-black colour, attached to the limbus and neighbouring parts of the cornea of one eye. The tumour, which had been observed for nine months, was of nodular appearance and firm consistence. The affected eyeball was removed, and

with the microscope the growth was found to present the usual characters of a melanotic sarcoma. It was covered with epithelium continuous with that belonging to the conjunctiva and cornea. Although it rested upon the substantia propria of the cornea, yet it invaded the latter structure to a limited extent only. Brief details are appended of two cases of epibulbar sarcoma. The communication (which is illustrated) concludes with some remarks upon epibulbar sarcomata, their frequency, causation, malignancy, and treatment.

(3A) **Rabitsch** describes the microscopical examination of a cyst found accidentally in the myopic eye of a man, aged 54 years. The cyst was of serous nature, without any formed contents. It extended from the anterior ciliary processes to well over the root of the iris. Its walls consisted of pigmented



epithelium. If one followed the layer of retinal pigmented cells forwards, it could be seen to divide into two layers at the ciliary processes, thus forming a cyst cavity. The so-called cyst was accordingly more in the nature of a bullous formation than of a true cyst.

A. LEVY.

(4) A girl, aged 16 years, consulted **Werner** on account of irritation of one eye due to the presence of some long hairs, which had made their appearance about six months previously.

The hairs were found to grow from a congenital lipo-dermoid lying beneath the conjunctiva near the outer canthus. The tumour, together with the adherent conjunctiva, was removed. Microscopically, the growth was found to consist of fat and fibrous tissue, covered with thickened epithelium, and containing hair follicles and sebaceous glands. It was, therefore, a lipo-dermoid.

(5) **Mayou's** pathological investigations were conducted upon six cases of epithelial xerosis with hermeralopia in patients from 4 to 19 years of age. That the B. xerosis is not the cause of the conjunctival patches is shown by several facts, amongst which may be enumerated the important one that the affection cannot be reproduced by inoculation. Again, the bacilli are not found in the tissues of the conjunctiva; they are present in normal Meibomian secretion; and their behaviour in cultures after the primary growth on blood-serum is that of saprophytes. As regards the histological appearances, the epithelium is thickened, and its superficial strata form a layer of keratin on the surface. Fat granules cannot be demonstrated with certainty. Beneath the keratin layer is found a layer of cells containing granules of kerato-hyalin, which stain well with Ernst-Gram method and in some other ways. Muroid cells are conspicuous by their absence. Mayou concludes "that the essential change in the production of these plaques is the keratinisation of the epithelium, due partly to exposure and drying of the epithelium, and partly to deficient lacrymal secretion occurring in children of delicate health, and that the Meibomian secretion with the bacilli is simply adherent to these plaques owing to the altered surface tension due to keratinisation of the epithelium and the absence of muroid change therein."

(6) In examining an eye which had been enucleated for hæmorrhagic glaucoma, **Schnandigl** found the optic nerve studded with large cysts, lined with neuroglia cells. Similar cystic degeneration in glaucoma has been described by Schnabel. The formation of the cysts is, according to Schnandigl, due to destruction of nerve fibres by hæmorrhage; the resulting cavities are filled up by proliferating neuroglia, if they are of not of too large a size; otherwise this proliferation remains insufficient to form a solid scar and produces a sort of lining only, while the cyst persists. This process is somewhat analogous to that which leads to the formation of hæmorrhagic cysts in the brain and of traumatic syringomyelia of the medulla. R. GRUBER.

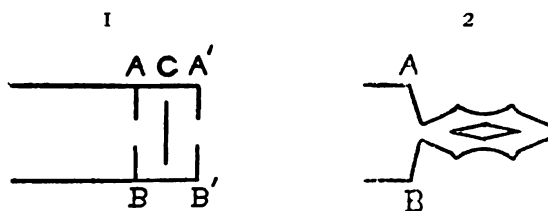
(7) **Lotine** describes the result of the microscopical examination of a case of primary melanosarcoma of the eyelid, and states that sixty such cases only are described in the literature.

A. MAKRAKOW.

II.—OPERATIVE TREATMENT OF STRABISMUS.

Verhoeff, F. H.—A graduated plastic Tenotomy. (*Eine graduelle plastische Tenotomie.*) *Klin. Monatsbl. f. Augenheilkunde*, April, 1903, p. 393.

Verhoeff describes an operation for strabismus that has yielded such good results that it is recommended in all cases where a moderate deviation only has to be corrected. Details follow:—A vertical incision is made through conjunctiva and Tenon's capsule over the insertion of the tendon. The tendon is raised upon a squint-hook, and its lateral connections with the capsule loosened. At a distance of about 5mm. from its insertion the tendon is divided above and below with scissors in such a way (*see* Fig. 1, A, B) that a median bridge of tissue still remains uncut. By means of forceps and scissors, a long vertical button-hole, so to speak, is cut midway between the first incisions and the insertion of the tendon (C). The tendon is then incised at the upper and lower part of its insertion, so that it remains attached to the



sclera by a narrow tongue only ($A^1 B^1$). The result, when the tendon is stretched, is shown in Fig. 2. The final step is to unite the conjunctival wound with a couple of points of suture. Verhoeff has performed the foregoing operation several times on the dead body and four times on the living subject. By operating on one eye alone he has obtained, as the greatest effect, a correction equal to 10° . As judged by two of his cases, the ultimate remains the same as the immediate result. Hyperphoria was never brought about. Verhoeff considers that the operation is indicated in the following cases: (1) heterophoria of 20° or less; (2) in the second eye when advancement and tenotomy, practised on the squinting eye, has failed to cure a squint. The article concludes with some remarks upon the tests for heterophoria.

Verhoeff's operation, then, depends upon a lengthening of the tendon. It is, therefore, an ingenious variant of the procedure suggested by Stephenson,* in July, 1902, and advocated by Landolt, in January, 1905.

MAX P.

*See THE OPHTHALMOSCOPE, April, 1905, p. 190.

III.—CATARACT.

- (1) Moulton, H.—Amblyopia with slow recovery of vision after extraction of very old cataracts. *Ophthalmic Record*, April, 1903.
- (2) Demaria, E. B.—Experimental researches on the production of cataract by massage of the lens. (Experimentelle Untersuchungen über die Erzeugung von Katarakt durch Massage der Linse.) *Graefé's Archiv f. Ophthal.* 59, 3, 22 Februar, 1904.
- (3) Augieras—Case of spontaneous resorption of a cataractous lens. (Cas de résorption spontanée du cristallin cataracté.) *La Clinique Ophtalmologique*, août, 1904.
- (4) Kuhnt, H.—On the extraction of ordinary senile cataract. (Ueber Ausziehung des einfachen Altersstars.) *Zeitschrift für Augenheilkunde*, September, 1904.
- (5) Faber.—Remarkable consequences of extraction of the lens. (Bijzonder heden na cataract-extractie.) *Ned. Tijdschrift voor Geneesk.*, 1904, II, No. II.
- (6) Hatzidakis.—Double congenital cataract operated on twelve years after birth, with complete integrity of the fundus oculi. (Double cataracte congénitale opérée douze ans après la naissance, avec intégrité parfaite du fond de l'œil.) *Ann. d'Oculistique*, T. CXXXII, p. 283, octobre, 1904.
- (7) Menacho.—Extraction of Cataract after preliminary Iridectomy. (La extraccion espaciada (en dos tiempos) de la catarata.) *Arch. de Oftal. Hisp.-Americanos*, November, 1904.
- (8) Bonamico.—Capsulo-lenticular extraction of cataract. (Alcune osservazioni sull' estrazione di cataratta col metodo capsulo-lenticolare.) *La Clinica Oculistica*, Nov.-Dec., 1904.
- (9) Demaria.—The experimental production of cataract by massage in rabbits. (Trabajo experimental acerca de la catarata producida per el masaje an el conejo.) *Anales de Oftalmologia*, Diciembre, 1904.
- (10) Collins, Captain D. J.—Notes on a series of operations for the extraction of cataract. *Journ. Royal Army Medical Corps*, February, 1905.

(1) A woman who had been blind from cataract for 27 years was operated upon by Moulton, and, although the operation was surgically successful, yet the patient enjoyed little vision for

the first few weeks. Fixation was imperfect. Eventually she recovered enough sight to thread a needle and to do anything else she liked. In the second case blindness, due to traumatic cataract, had lasted 45 years. Recovery of useful sight after operation was in this case very slow. Moulton concludes that both cases were instances of amblyopia from disuse, so that after operation the patients had to learn, as it were, to see anew.

(2) By rubbing the anterior surface of the lens with a cataract spoon (after puncture of the anterior chamber), **Demaria** could always produce a cataract in the rabbit. The opacity is due in the first instance to lesion of the epithelium, which becomes detached, and to consecutive diffusion of the aqueous humour under the capsule. The results of the comparative weighings are rather interesting, as even only an hour after the operation, a very considerable increase in the weight and the size of the lens had taken place, although there was no wound of the capsule. Afterwards, secondary changes of the lens fibres appear, and, later on, reparation of the capsular epithelium, but the cataract never disappeared. R. GRUBER.

(3) Two remarkable cases are recorded by **Augieras**. The first, a man of 64 years, was treated for a severe attack of rheumatic iritis of the right eye. The patient was otherwise healthy, and was accustomed to bicycling. After the attack of iritis had subsided the right lens was found to be completely cataractous, and the left lens transparent. Operation was refused. A year later the sight began to return. Four years later nothing remained of the cataract but a thin, transparent capsule: corrected vision = $\frac{6}{20}$. The second patient was an unmarried lady of 51 years, of rheumatic constitution and sedentary habits, who consulted Augieras on account of failing vision. Peripheral striate lens opacities in each eye: prognosis accordingly. Later (exact time not stated) the patient returned and stated that the sight had rapidly improved after (1) several days of physical exercise and very low diet, the latter brought about by want of money; (2) an attack of acute conjunctivitis. When the eyes were examined, no striæ were seen in one eye and a few only in the other.

The author points out that the circumstances determining the absorption in the first case and the clearing of the lens in the second case were similar: (1) good general health and regular physical exercise conjoined with a local inflammatory process; and (2) a change of habit from sedentary to active with reduction of the amount of food, conjoined with an acute conjunctivitis. ERNEST THOMSON.

(4) **Kuhnt** recounts the methods in use at his clinic for removal of senile cataract. He commences with an account of the

antisepsis and asepsis employed. The day before operation the field is carefully cleansed with soap, 65% alcohol, and $\frac{1}{1000}$ cyanide of mercury. An antiseptic bandage is then put on which is removed on the following day on the operating table. The cleansing is then repeated, and the conjunctival sac carefully irrigated with normal saline solution. The operator wears a sterilized linen coat and cap, and in order to prevent spraying the field of operation with finely divided particles of saliva, while speaking or coughing, he also wears a veil suspended in front of his mouth. All instruments and drugs are boiled.

Proceedings for Maturation.—On the whole, Kuhnt prefers trituration according to Förster's method, and in those cases where this is inadmissible, he does a dissection of greater or lesser extent. The incision which Kuhnt prefers lies in the most peripheral part of the cornea just in front of or in the limbus and takes in $\frac{2}{3}$ ths of the corneal circumference. Its edges must be smooth—that is to say, made with as few sawing movements of the knife as possible. To fulfil these requirements the author has devised a special knife, which combines the Graefe and Beer forms. For 6 mm. from the point it resembles an ordinary Graefe and then broadens out into the triangular Beer form. Towards the end of the incision he always makes with the knife a conjunctival flap which he afterwards usually fastens down by suture.

Iridectomy.—On the whole, the author prefers simple extraction, but, nevertheless, he frequently does iridectomy first, occasionally even weeks or months before the extraction.

Capsulotomy.—Kuhnt generally does this with a specially constructed fine toothed forceps. For cortical masses or soft matter remaining behind he uses some form of suction apparatus.

A. LEVY.

(5) A patient, operated on for senile cataract, whose visual acuity, with sph. $+10$ cyl. $+1$, amounted to $\frac{4}{36}$, could see nearly as well without correcting glasses ($\frac{3}{36}$), by narrowing the palpebral fissure. Small print could be read at 8 cm. or 9 cm. without glasses. In Faber's second case myopia of 32 D. to 34 D. existed in 1892. In 1903 the lens of both eyes had become cataractous; vision with -32 to -34 D. = $\frac{2}{60}$. After the removal of the cataract, refraction of left eye was hypermetropic astigmatism of 4.5 D. (V. after correction = $\frac{3}{6}$), on the right eye, hypermetropic astigmatism of 2.5 D., after correction V. = $\frac{3}{36}$. Diminution of the refraction to such a degree is rarely observed after extraction of the lens.

G. F. ROCHAT.

(6) **Hatzidakis** removed a soft cataract from the eye of a microcephalic girl, aged 12 years, who had also divergent squint

and rotatory nystagmus. After the operation the eye had vision of 1.9 (apparently without correction), four dioptries of myopia, and no anomaly of the fundus.

R. J. COULTER.

(7) In the operation of cataract extraction we must guard not only against suppuration, but also against prolapse or inflammation of the iris. The surgical ideal would be to adapt our method to each case, but, at the best, we can only provide for those accidents which seem probable. Extraction after preliminary iridectomy is less liable to be followed by iridic complications than if the simple operation be performed or the iridectomy be done at the same time as the removal of the lens. The chief disadvantage of the separated operation is that it necessitates two interventions; on the other hand, after-cataract is less common, and needling is less frequently required. **Menacho** chooses this method when the cataract is very slow in maturing; when the cataract is known to be complicated by vitreous or fundus lesions; when the patient has only one eye; when the conjunctiva or lacrymal apparatus is unhealthy; and, lastly, when there is any severe general disease. In one respect the author differs from the practice usual in England, in that he recommends that the primary incision for the iridectomy should be made very peripherally, and the second incision for the extraction more anteriorly in the cornea. Most British surgeons are inclined to act in exactly the opposite way, and to make the section for iridectomy in front of the plane for the future extraction.

HAROLD GRIMSDALE.

(8) **Bonamico** praises this method, the invention of the late Professor Gradenigo, for the following reasons: it is the only method which allows us to deal with an immature cataract by extraction; the artificial maturation of any lens is not unattended with risk, while an attempt to remove is almost certain to be followed by complications occasioned by the fragments of lens which have unavoidably been left behind. To avoid all bleeding, which might enter the anterior chamber and set up iritis, the incision should be entirely corneal; the chance of an intruding blood-clot more than counterbalances the greater rapidity of healing when an incision is carried into the conjunctiva. Above all things it is necessary for the patient to be calm; not only still in body, but also in mind—nothing less can ensure a successful result. The pressure to expel the lens, after incision of the suspensory ligament, must be applied very skilfully and with great care. The pressure needed to expel the lens is much less than that which is necessary in other methods of operation.

HAROLD GRIMSDALE.

(9) After a short description of the various methods which have been recommended for the artificial maturation of cataract, **Demaria** describes the method he used in these experiments. He dilated the pupil with atropine and anæsthetised the parts with cocaine ; then with a keratome he made a small incision in the cornea, and with a flat spatula massaged the capsule of the lens for some three or four minutes. The eyes were enucleated, after a varying interval, so that the resulting lesions might be followed during the whole of their course.

In two cases the eyes were removed immediately after the first operation, and the capsule examined at once. It was found that the cells lining the capsule were wanting in the central part, that is to say, where the massage had been applied. In the peripheral regions the cells were normal in form, position, and color.

In the lens at a later stage the capsule soon became thickened, and under it appeared a layer of fluid, probably derived from the aqueous. In this were found cells in various stages of degeneration, according to the time which had elapsed before the excision of the eye, and the amount of massage. Those lenses which had longest massage showed a layer of fluid even under the posterior capsule.

In the lens itself were found fissures and cracks, for the most part between the cortex and nucleus, not due to *post-mortem* change, since they were filled by a coagulum. The fibres were swollen and partially broken down. At a still later stage the subcapsular epithelium regenerated and the fluid disappeared.

The author weighed the lenses of the two eyes after excision ; this gave a great increase of weight after operation. Within one hour the weight had increased 90 mgr. These experiments seem to prove that the action of massage is to displace the anterior epithelium of the lens, after which the capsule allows the entrance of the aqueous. The changes in the fibres and cells are consequent on this.

HAROLD GRIMSDALE.

(10) **Collins** gives a brief and very candid account of thirty-six extractions for cataract performed by him in 1901-2 upon natives of India. Iridectomy formed part of the operation, except in one nervous man, whose lens was expelled in the unruptured capsule immediately after the sclero-corneal incision had been made. The patient's recovery was unusually rapid. It may be noted that in six of the cases vitreous escaped after delivery of the lens ; in two cases the lens was dislocated during the capsulotomy, and had to be removed with the vectis ; and, finally, that four of the cases were unsuccessful as the result of irido-cyclitis following the operation.

IV.—EXOPHTHALMIC GOITRE IN CHILDREN.

- (1) **Lawson, Arnold.**—A case of exophthalmic goitre in a child aged twelve years. *Reports of the Society for the study of Disease in Children*, Vol. IV (1904), p. 58.
- (2) **Williams, E. Cecil.**—A case of chronic Graves' disease. *Ibidem*, p. 312.
- (3) **Stephenson, Sydney.**—A case of Graves' disease in a boy twelve years of age. *Society for the study of Disease in Children*, 18th November, 1904.

That Graves' disease is uncommon in childhood will be generally conceded. An account of three such cases, therefore, will not be altogether devoid of interest.

(1) **Lawson** reports a case in a well-nourished girl, 12 years of age, who presented "the typical characteristics of a patient in an advanced stage of Graves' disease, excepting that she had never lost flesh and shows no trace of anæmia." Exophthalmos, the first symptom, was followed by enlargement of the thyroid six months afterwards.

(2) **Williams'** case occurred in a girl of twelve years, who complained of shortness of breath. There was some exophthalmos; Græfe's sign not present. Slight muscular tremor; pulse 160 to the minute. There was no enlargement of the thyroid gland.

(3) **Stephenson** reports a case in a boy, twelve years of age. The lad was first seen on account of a recurrent swelling of the upper eyelids, diagnosed as angio-neurotic œdema. Four months later, however, the clinical picture had changed. The thyroid was then moderately enlarged; the pulse-rate was 120 to the minute; and there was a slight degree of exophthalmos. The visual field for white was contracted. Findings negative as regards tremor, sleeplessness, loss of flesh, von Græfe's sign, and Moebius' phenomenon.

V.—TUBERCULOUS AFFECTIONS OF THE EYE.

- (1) **Knapp, Arnold.**—A case of localised tuberculosis at the head of the optic nerve; microscopic examination. *Archives of Ophthalmology*, January, 1903.
- (2) **Spalding, J. A.**—Tuberculosis of the eye—two cases: one at the head of the optic nerve, the other at the equator. *Trans. Amer. Ophthal. Society*, Vol. X (1903), Pt. I.
- (3) **Jessop, W. H.**—Two cases of tuberculous choroiditis. *Trans. Ophthalmological Society*, Vol. XXIII, 1903.

- (4) Paton, Leslie.—? Tuberculous choroiditis. *Trans. Ophthalmological Society*, Vol. XXIII, 1903.
- (5) Polignani, L.—Primary tuberculosis of the conjunctiva-neoplastic form. (Tuberculosis primaria della congiuntiva, forma neoplastica.) *Tocco, Edit., Naples*, 1903.
- (6) White, W. Hale.—A case of general tuberculosis. *General Practitioner*, September 5th, 1903.
- (7) Polignani, L.—Primary tuberculous dacryoadenitis. (Dacrioadenite tuberculare primaria.) *Tocco, Edit., Naples*, 1903.
- (8) Terson (père).—Ocular tuberculosis : remote results of the excision of a tubercle of the iris. (Tuberculose oculaire : suites très éloignées de l'excision d'un tubercle de l'iris.) *Annales d'oculistique*, février, 1904.
- (9) Dupuy-Dutemps.—The glaucomatous form of choroidal tuberculosis. (Forme glaucomateuse de la tuberculose choroidienne.) *Archives d'ophtalmologie*, mai, 1904.
- (10) Moissonnier.—Tuberculous irido-cyclitis. (Irido-cyclite tuberculeuse.) *Archives d'ophtalmologie*, juillet, 1904, p. 438, and *Bull. et Mém. de la Société française d'Ophtalmologie*, 1904.
- (11) Monthus, A.—Upon an atypical form of ocular tuberculosis. (Sur une forme atypique de tuberculose oculaire.) *Archives d'ophtalmologie*, août, 1904.
- (12) Lunn, J. R.—Tuberculosis of choroid, with double optic neuritis. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 127.
- (13) Smyth, E. J.—Tuberculous disease of conjunctiva. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 37.
- (14) Chevallereau and Chaillous.—The sarcomatous form of conjunctival tuberculosis. (Tuberculose conjonctivale d'apparence sarcomateuse.) *Bull. et Mém. de la Société française d'Ophtalmologie*, 1904, p. 260.
- (15) Pooley, Thomas R.—A case of conglomerate tubercle of the choroid. *Trans. American Ophthal. Society*, Vol. X, Pt. II, 1904, p. 256.
- (16) Posey, Wm. Campbell.—Intraocular tuberculosis, with the report of two cases. *Trans. American Ophthal. Society*, Vol. X, Pt. II, 1904, p. 244.

- (17) **Hancock, W. Ilbert.**—A case of (?) tubercle of the retina. *Royal London Ophthalmic Hospital Reports*, Vol. XVI, Part II, March, 1905.

(1) Localisation of a tuberculous lesion in the retina is extremely rare. **A. Knapp** reports the following case, confirmed microscopically: the eye of a negro child, aged 2 years, was excised on the supposition that it contained a glioma. When the globe was divided, a solid white tumour, about 0.6 cm. broad, was found to lie at the apex of the totally detached retina. Microscopically the growth consisted of tuberculous material, and tubercle bacilli were demonstrated. Somewhat later the child developed other manifestations of the diathesis in the shape of swellings of both elbow joints, cough, and hectic fever. Knapp concludes that the ocular lesion began in the retina. He alludes to similar cases by W. A. Brailey, O'Sullivan and Story, and Sattler.

(2) **Spalding's** patient, a boy eight years of age, without tuberculous antecedents, was seized soon after an accident by an illness, marked by headache, raised temperature, accelerated pulse, retraction of head, and unconsciousness. After the illness had lasted for ten days, one eye became inflamed, manifested a yellowish reflex, and was found to be blind. The lad then got much better, but a relapse occurred at the end of about a week. When seen several weeks later by Spalding, an intra-ocular tumour was diagnosed, and the affected eye removed. The consequence was "that every symptom ceased as if by magic, and by the time the patient recovered from the ether narcosis he was, practically speaking, cured." A yellowish tumour—subsequently shown to be a tuberculous growth with tubercle bacilli—was found to arise from the optic papilla, to fill one-third of the vitreous chamber, and to detach the retina. The facts of Spalding's second case were as under: a puny child of seven years lost the sight of one eye from an attack of double "infantile ophthalmia" two weeks before he fell under Spalding's notice. The blind eye was abnormally large, and showed, besides a total leucoma, tenderness, and normal tension. It was also somewhat painful and red. A second attack of redness and pain supervened about a fortnight after the first examination, and as the other eye began to show signs of sympathetic irritation, the blind eye was removed. "The result of the operation has been a constant improvement in the appearance of the boy, who, from a pale-faced weakling creature, has in a single month become lively and ruddy." A tuberculous nodule, the size of a pea, was found at the equator, on the nasal side of the eyeball, originating from the choroid. Examination for

tubercle bacilli gave a positive finding. Spalding concludes that this was probably an instance of endogenous infection of the posterior chamber of the eye.

(3) **Jessop** describes at some length two cases of tuberculous choroiditis, the essential facts of which are as under :—

1.—A girl, 9 years of age, who suffered from symptoms of constitutional tuberculosis, presented a smooth, non-fluctuating swelling, adherent to the sclera, on the lower-outer side of one eye. It measured 10 mm. by 12 mm. by 17 mm. There were two detachments of the retina below the optic disc. There was no apparent connection between the scleral swelling, on the one hand, and the retinal detachments, on the other. The external swelling, which had thick walls and contained caseating, yellow pus, was removed, and the adjacent sclera scraped with a sharp spoon. No giant-cells or tubercle bacilli were found in the walls of this abscess, but a guinea-pig inoculated with the caseous material died from tuberculosis. The choroidal changes are gradually clearing up, while little remains of the scleral abscess. 2.—A female, aged 23 years, had suffered from a suppurating mammary cyst, in which tubercle bacilli were found, four years before she came under Jessop's care. There was a marked family history of phthisis. Jessop found a yellowish-white swelling, lying beneath the retinal vessels, just above the optic disc of one eye. It had soft-looking edges, and was raised + 2 D. V. = $\frac{6}{18}$. No absolute scotoma corresponding to the lesion. The case was kept under observation for upwards of three years, and the swelling was in due course replaced by an insignificant thickening of the retina.

In commenting upon these cases, Jessop lays stress upon the almost complete absence of pathological pigmentation in the choroidal lesions, of new vessels, and of vitreous opacities. His experience leads him to believe that in acute miliary tuberculosis and in tuberculous meningitis, tubercle of the choroid is found in from 2 per cent. to 5 per cent. of the cases, and then only a few hours or days before death. With regard to tuberculous choroidal changes, except in miliary tuberculosis or tuberculous meningitis, he has observed only the two cases noted above.

(4) A lad, aged 8 years, was seen by **Paton** on account of a squint of the left eye that had existed for several years. The fundus of the affected eye showed a white, translucent swelling, obscuring the optic disc, and having coils of blood-vessels coursing over its surface. A dark, pigmented patch could be dimly recognised through the lower part of the swelling. The summit of the swelling could be seen with a + 4.5 D. lens,

In the neighbouring parts of the fundus there were small areas of white exudation and larger areas of pigmentary disturbance. No family history suggestive of syphilis. The patient had enlarged glands in the neck.*

(5) **Polignani** excised a small tumour springing from the upper tarsal conjunctiva, near the lacrymal angle, from the eye of a woman aged 41 years. Inflammatory symptoms were not well-marked. Glands not involved. Upon microscopic examination, the growth was found to be a typical granuloma, with epithelioid and giant cells.

A. ANTONELLI.

(6) In the course of a clinical lecture, **Hale White** emphasises the fact that acute miliary tuberculosis cannot be diagnosed by physical signs in parts of the body other than the brain, lungs, and choroid. With regard to the choroid, he insists upon the necessity of examining the eyes in such cases, because tubercles of the choroid are by no means infrequent in cases of general miliary tuberculosis, especially when the tuberculosis affects the meninges. "More than once," he writes, "I have been able to settle a doubtful diagnosis definitely by examining the eyes and finding tubercles."

(7) **Polignani's** clinical observation is interesting, for the histological examination of the excised gland left no doubt as to the tuberculous nature of the lesion (giant cells, caseation, etc.). The patient was a man of 38 years.

A. ANTONELLI.

(8) **Terson père** publishes a case to show that the simple excision of a tubercle of the iris may result in cure. In the year 1889 a child, aged 12 years, was brought for advice with regard to a solitary tubercle of the iris. The only other sign of tuberculosis was lupus of the cheek. The tubercle, which probably involved not only the iris but the ciliary body as well, was excised, with some little loss of vitreous. The nature of the neoplasm was proved both by histological examination and also by the inoculation of rabbits and guinea-pigs. Later, the lens became opaque, and was extracted, and, later still, a small transparent cyst appeared upon the iris, and collapsed the moment it was pricked. The patient is now 26 years of age, fifteen years have elapsed since the first operation, and with the affected eye she can distinguish large objects. Her general health is good, and there are no signs of tuberculosis.

S. S.

*Pathological examination of this eye by J. H. Parsons (*see Trans. Ophthalm. Society*, Vol. XXIV, 1904, p. 149), led to inconclusive results.—EDITORS.

(9) **Dupuy-Dutemps** describes a case of choroidal tuberculosis complicated with secondary glaucoma. A child, aged 6 years, lost the sight of one eye two months before he was seen by the author. Upon examination, this was found to be due to detachment of the retina. Somewhat later, glaucoma set in, and becoming worse, led to removal of the eye, but not before a staphyloma had been produced. A month after operation, the child developed a "cold abscess" of the thigh. The eyeball, when opened, was found to contain a tumour, 15 mm. in length and about 5 mm. in height, situated in the thickness of the choroid in the macular region. There was almost complete detachment of the thickened and friable retina. Microscopically, the neoplasm was made up of irregular masses of round cells of embryonic type along with some fusiform cells; they included tuberculous granulations and giant cells. Tubercle bacilli were found in sections treated by the Ziehl method, although they were by no means numerous. The tuberculous tissue had invaded the retina in those parts of the latter which were adherent to the tumour. The optic nerve, although atrophic, was free from tuberculous changes. Dupuy-Dutemps points out that this variety of intra-ocular tuberculosis is very liable to be mistaken for glioma or sarcoma, according to the age of the patient. Diagnostic features are: the age of the patient, rapid evolution, scleral staphyloma, the early appearance of iritis, and the existence of other tuberculous lesions. That tuberculine is no certain means of diagnosis is shown by a case of Bongartz (*Inaug. Dissert., Wurzburg, 1891*) where three injections gave no reaction. Yet it was a typical case with giant cells and Koch's bacilli. It is suggested that a positive result might sometimes be obtained by inoculating into guinea-pigs the aqueous humour from these cases.

(10) **Moissonnier**, of Tours, reports a case of tuberculous iridocyclitis in a boy, aged 11 years, where the diagnosis was confirmed pathologically. Eighteen months after the diseased eye had been removed, the patient developed Pott's disease. Somewhat similar cases by Panas, Wagenmann, and Eperon are quoted, and the writer then passes on to consider the pathology, etiology, diagnosis, prognosis, and treatment of the ailment. We may glance at each of these in turn. *Pathology.*—The lesions are almost identical in the different varieties of tuberculous iridocyclitis. The corneal lamellæ present masses of leucocytes and newly-formed vessels. The anterior chamber, which is reduced in depth, often contains in acute forms of disease fibrinous or fibrino-purulent exudations. The iris is thickened, especially towards its base, and infiltrated with embryonic cells. The pupil is obstructed.

The ciliary body is increased in size, diffusely infiltrated, and often covered with masses of embryonic tissue. The vitreous shows round cells: the crystalline lens may become absorbed. The retina may be slightly infiltrated, but the choroid is scarcely changed. Tuberculous follicles, caseous or otherwise, may be found in all the affected tissues. The sclera becomes invaded, and ultimately perforated. That the cyclitis is always accompanied by iritis is due to the infected liquids of the eye being carried forward towards the filtration-angle.

Etiology.—Intra-ocular tuberculosis, essentially a disease of infancy and adolescence, is never a primary affection, although the primary focus may readily escape clinical examination or may even have undergone cure. The author wholly rejects the theory of primitive infection during conception.

Diagnosis.—Koch's tuberculine is warmly recommended by Moissonnier as a diagnostic agent in doubtful cases. Considerable stress is laid upon reduction of the intra-ocular tension, which is said to be always present in these cases.

Prognosis.—Tuberculosis of the uveal tract nearly always leads to loss of sight and to destruction of the eye. Moreover, generalisations are not uncommon, so that pulmonary phthisis and meningitis are habitual complications. Burnett, Haab, and Mackenzie have reported cases of tuberculous irido-cyclitis, followed by death. *Treatment.*—Whenever the tubercles have become confluent and the sight lost, the eyeball should be removed forthwith before perforation takes place. When the latter event has occurred, Moissonnier prefers exenteration to enucleation. In brief, it is recommended to deal with this affection in much the same way as one would treat a malignant neoplasm.

S. S.

(11) **Monthus** saw a young woman, who gave a history of one eye having been affected for about four months with what was looked upon as a gumma of the sclera. Mercurial injections had not improved matters. The patient also suffered from an ulceration of the first phalanx of one finger and of one sub-mammary furrow. Family history and general condition good. Upon examination, a yellowish-red, irregular mass, projecting from 5 mm. to 10 mm. above the surface, was found upon the supero-internal quadrant of one eye, the sight of which was 0.3. The conjunctiva was healthy save at the diseased spot, where it merged into the swelling. The iris was normal. Tension not increased. With the ophthalmoscope, at a point corresponding with the tumour, several rounded nodules, of greyish colour, could be seen in the fundus. Removal of the tumour was followed about two months later by a partial recurrence. Excision of the recurrent growth and the application of the thermo-cautery led to cicatrisation of the

parts and apparent cure, which remained permanent when the woman was last examined, ten months after the primary intervention. Inoculation of animals with pieces of tissue removed from the eye gave positive results, and tubercle bacilli were demonstrated in the lesions thus produced.

S. S.

(12) **Lunn's** case, clearly one of atypical disseminated tuberculosis, developed double optic papillitis, and in one eye a choroidal tubercle. The latter, which was about one-third the size of the optic disc, lay near the papillæ, and appeared to be slightly raised. It formed a whitish area, of oval shape, and a fine line of pigment bordered it at one part. Moreover, two smaller satellite tubercles were present in the neighbourhood. After an acute illness lasting thirteen days, the patient (a female child, aged 6 years) began to improve, and was eventually discharged some three months after the beginning of the attack. The sight was then good, the optic neuritis had subsided, but the oval white area in the fundus still persisted, as well as one of the smaller patches.

(13) A delicate lad, aged 4½ years, who had had enlarged glands removed from his neck, was brought to **Smyth** with a number of prominent granulations on the outer third of the conjunctiva of one lower lid, and a nodule on the tarsal surface of the upper lid. There was no definite ulceration. The corresponding preauricular gland was markedly swollen. A microscopical examination of the growths showed typical tuberculous tissue, with giant cells and bacilli. The case was treated by excision and scraping. It should be added that the child's mother had died recently, it was thought from phthisis pulmonalis.

(14) A policeman, aged 40 years, consulted **Chevallereau** and **Chailous** on account of an affection of the left eye, of about five weeks' duration. The lids were so thickened and red as to recall the appearance of a purulent ophthalmia. The ocular conjunctiva had a lardaceous appearance, and formed a prominent fold encircling the limbus. The semilunar fold, equally hypertrophied, formed a roll 4 mm. to 5 mm. in thickness. The glands were not involved. But the patient had suffered for about a year from "chronic bronchitis" (? tuberculosis), his left testicle was enlarged, and he had a kind of ecthyma on the skin of the calf. Diseased material was removed from the ocular conjunctiva. When examined histologically, it showed a diffuse cellular infiltration, without giant-cells or caseation. In other words, no histological evidence of tubercle was forthcoming. It was altogether otherwise as regards inoculation experiments. For example, a guinea-pig inoculated subcutaneously with a piece of the excised

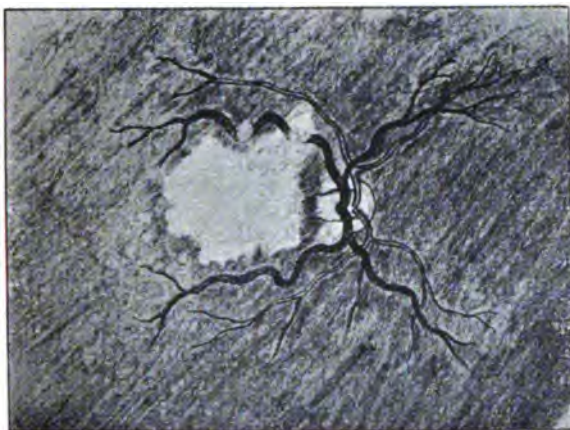
tissue, presented several weeks after the operation, a local ulceration, and several months afterwards, an enlarged inguinal gland was found to contain tubercle bacilli. Again, a rabbit inoculated with a fragment of the tumour in the anterior chamber, presented several weeks afterwards, hypopyon and tuberculous nodules of the iris.

(15) A man, *ætat* 26 years, of tuberculous antecedents, consulted **Pooley** on account of absolute glaucoma of one eye, of one year's duration. After removal, the eye was examined pathologically, with the following results: the globe was enlarged in a plane slightly oblique to the antero-posterior axis, owing to a thickening of the sclera extending from the equator about 15 mm. towards the optic nerve. The underlying choroid was also solid and thickened over an area of about 12 mm. The thickened parts were found with the microscope to consist of tissue "eminently tubercular in character," to quote Pooley's words. Tubercle bacilli were demonstrated. It may be added, finally, that the patient, when seen one year after operation, remained in good health.

(16) **Posey** reports two cases of intraocular tuberculosis, the main features of which are given in outline below. *Case No. 1*: A coloured child, aged six years, with a family history of tuberculosis, was brought with inflammation of one eye. The cornea was hazy, and here and there contained little particles of yellowish-white infiltration. A nodule of similar colour, the size of a very small pea, projected from the root of the iris into the anterior chamber. The affected eyeball was eventually enucleated. A whitish mass filled the anterior chamber on the outer side, surrounded the ciliary processes, and displaced the lens backward. The main portion of the mass consisted of small round cells, epithelioid cells, and giant cells. A few tubercle bacilli were found. The anterior chamber of a rabbit, inoculated with exudation from the diseased eye soon after removal of the latter, showed thirty-nine days later, miliary tubercle of the iris, confirmed bacteriologically. *Case No. 2*: A man, aged thirty years, developed inflammation in one eye, and when examined two months later by Posey, was found to present numerous, small, yellowish nodules scattered throughout the substantia propria of the cornea. V.=p. l. A scleral nodule later made its appearance in the interval between the insertion of the external and superior rectus muscles. Tension was raised. Under the supposition that the process was of gummatous nature, the patient was subjected to specific treatment, with the result that the symptoms of active inflammation subsided. However, the lens became cataractous and tension kept high, so that after the inflammation had lasted for about two years, the eyeball was

enucleated. Macroscopically, an area of choroido-retinitis (7 mm. by 16 mm.) was seen to lie in the upper half of the globe, beginning 14 mm. from the entrance of the optic nerve. Over this area the sclera was thickened and slightly bulged. Microscopically, miliary tubercle of the iris and solitary tubercle of the choroid were demonstrated, but tubercle bacilli could not be found, despite careful search.

(17) **Hancock** gives an excellent account of a case believed to be tubercle of the retina. The patient, a healthy man of 19 years, denied syphilis, and gave a good family history. Ophthalmoscopic examination of the right eye showed the condition depicted in the figure. An ill-defined, yellowish-white area, having a squadrangular outline, lay on the temporal side of the



disc in the macular region. A few small outlying spots lay to the outer side and below the main mass, which was raised about 1.5 mm. The retinal veins were tortuous and large, and here and there more or less concealed by retinal oedema. V. = fingers; tension, normal; lens, clear; no pain or redness of the eye; eye divergent 15°. As the condition of the fundus showed no signs of improvement, the eyeball was enucleated. Upon microscopical examination the choroid appeared to be normal. Two well-defined plaques of granulation tissue, however, were present in the retina, which was thickened, folded, and separated from the choroid by exudation. The two retinal plaques, internal and external, were connected by a band of fibrous tissue. The internal mass, confined to the nerve fibre layer, was made up of fibrous tissue containing giant cells, with centrally placed nuclei, and numerous round cells. The external

mass, confined to the rod and cone and external nuclear layers, differed from the other one in containing blood-vessels and proliferated pigment epithelium, while, on the other hand, not a single giant cell was to be seen. No tubercle bacilli (the eyeball had been hardened in formol) could be recognized in either of the retinal areas.

REVIEWS.

The Royal London Ophthalmic Hospital Reports. Vol. XVI, Part II, March, 1905. London: J. and A. Churchill. Price 5s.

This volume of *The Ophthalmic Hospital Reports* contains six communications, mostly of a developmental or pathological character. The papers are by E. T. Collins, H. Herbert, J. H. Parsons, W. I. Hancock, M. S. Mayou, and G. Coats. All will be noticed in due course in the columns of THE OPHTHALMOSCOPE.

The Treatment of Diseases of the Eye. By DR. VICTOR HANKE, first assistant in the University Eye Clinic of HOFRATH PROFESSOR E. FUCHS, in Vienna. Translated by J. HERBERT PARSONS, B.S., D.Sc., F.R.C.S., and GEORGE COATS, M.D., F.R.C.S. London: Hodder and Stoughton, 27, Paternoster Row. 1905. Price 3/6 net.

Dr. Victor Hanke's small book of 222 closely-printed pages provides a *résumé* of the methods of treating diseases of the eye adopted in Professor Fuch's clinic in Vienna. There is an old story of a Scottish lady who was found reading Johnson's Dictionary. When asked how she liked the volume, she replied, "The stories are good, but verra short." The same remark might, with justice, be applied to Dr. Hanke's description of the treatment of eye diseases. He has produced a good and useful volume, but, at the same time, its information is so condensed that continuous perusal is almost an impossibility for a normally constituted reader. The first chapter deals with the examination of the eye, and it is a little curious to find under this heading such alien subjects as massage, injections, bandages, and compresses. The rest of the information is arranged anatomically—that is to say, under such headings as conjunctiva, eyelids, cornea, lens, vitreous, retina, optic nerve, and so forth. A separate chapter, however, is devoted to glaucoma. Subconjunctival injections (somewhat neglected in England) are fully described, and recommended in a number of conditions, as inflammation and opacities of the cornea, choroiditis, retinitis, papillitis, and opacities of the vitreous. The solutions used

include mercury perchloride and cyanide, sodium chloride, hetol, iodine, and iodipin. Many of the newer remedies are mentioned, especially dionin, aspirin, soziodol of zinc and mercury, pyramidon, acoin, argyrol, chinisol, euphthalmin, gallicin, hetol, ichthargan, iodipin, itrol, jequiritol, largin, validol, nargol, protargol, tuberculin, and xeroform. Dionin is recommended in several conditions, some of the most important of which are corneal opacities, keratitis, iridocyclitis, and photophobia. Something is said about the various operations, although, as a rule, they are not formally described. The diagnosis of conditions that may be confused with one another is also discussed. An appendix is devoted to local anæsthetics, subconjunctival injections, intramuscular injections, and the several kinds of local application, collyria, powders, ointments, and so on. The book, indeed, contains a surprising amount of material.

Hospital slang ("K.P.," p. 99), errors in grammar ("if iridocyclitis or secondary glaucoma has ensued, they must be treated," p. 140), or faults of style ("several sittings are required for extensive tattooings. After some time the pigment must often be renewed, as it is partially thrown off," p. 111) are infrequent; and it must be acknowledged that the translators of Dr. Hanke's book have accomplished what must have been a somewhat tiresome task, well and faithfully.

Ueber die Behandlung der granulösen Augenentzündung.—

On the Treatment of Granular Lids. By DR. FRIEDRICH HEISRATH. 2nd Edition. Leipzig: 1905, JOHANN BARTH.

This pamphlet, published after the death of the author by his friend and pupil, Dr. Leo Pollnow, of Königsberg, deals especially with the operative procedures that Dr. Heistrath found advantageous in the treatment of granular ophthalmia. The experience of Dr. Heistrath was large and gained in the service of Dr. Julius Jacobson, so well-known in Prussia for his ophthalmological work. Besides the papers on granular ophthalmia, Heistrath published essays on the connection of the anterior chamber of the eye with the anterior ciliary nerves; on the ætiology of glaucoma; on the drainage system of the eye, with especial regard to the function of the canal of Schlemm; on the treatment of corneal opacities; on jequirity; and on the operative treatment of ptosis.

His method of treating granular ophthalmia, proposed and adopted in 1880, was, with some modifications, carried on for upward of twenty years with considerable success amongst the military patients in East and West Prussia. The disease was so rife amongst the soldiers in 1881 and 1882 that every second or third man was a sufferer, and many were unable to remain in the service; it was very widely

spread also amongst the civil population. The treatment then in general use consisted in the application of the solid silver nitrate or copper sulphate and of various other chemical agents, the actual cautery, and the scissors. To all these resort was frequently had and almost invariably without success, or even, if the hygienic surroundings were bad, with distinct exacerbation of the disease, whilst cicatricial surfaces were often left which were harmful. Peritomy was systematically practised without benefit. At length, some preliminary experiments having proved beneficial, Heisrath determined, during the absence for some months of his chief, Jacobson, to try in a large number of cases the removal of the tarsal "cartilages." Excellent results were attained, and Jacobson, on his return, was highly delighted to find that cases he had thought to be hopeless, and who had been obliged to employ the services of a guide were able to dispense with them. Dr. Heisrath's procedure is to evert the upper lid, to make a cut parallel to and about 2-3 mm. from the free border (a horn plate being placed beneath it by an assistant) through both the conjunctiva and tarsus. The free lid border is raised by the assistant with a pair of fixing forceps, and whilst the patient looks downward, the assistant still further effects downward rotation; and now the surgeon dissects away the tarsus and the conjunctival fold from their bed and removes them with scissors. The conjunctiva of the bulb, even though implicated in the disease, is to be preserved. In this way a portion of the mucous membrane and tarsus is removed, having a length of 2-2½ cm. and a breadth of 1-1½ cm. The borders of the wound are finally to be brought together with from two to six sutures, taking care that if the lid is much shrunk there shall be no excessive dragging of the surrounding tissue of the lid. The suture material must, of course, be fine and soft, and the knots small, that there may be no unnecessary irritation. If owing to the condition of the lid, the edges of the wound cannot be satisfactorily brought together, the margins must be freed by undercutting for some distance. The operator must use his judgment in determining how much of the conjunctiva, healthy or otherwise, he should remove in any given case; but the essential principle of the operation is the removal of the tarsus. Care must be taken that the free border of the lid preserves its normal direction. The employment of a 4 per cent. solution of cocain enables the operation to be performed without pain. The sutures may be removed on the sixth day, care being taken to exert no traction that may separate the lips of the wound. If the lower lid has been operated on, union without suture is usually complete in the course of a week. The cornea usually rapidly clears, so that the patient, who may only have been able to see large objects, can discern $\frac{1}{8}$, and become

again capable of following his trade. Relapses are rare. Heisrath's conclusions were based upon 10,000 cases. He has largely tried, but places little reliance on, other methods of treatment, such as the application of sublimate, formaldehyde, and crushing.

HENRY POWER.

On Trachoma: histological, ultramicroscopical, and physiologico-chemical contributions to the theory of inflammation. By E. RAEHLMANN. Ueber Trachom: Histologische, ultramikroskopische und physiologisch-chemische Beiträge zur Entzündungslehre. Von E. RAEHLMANN. Mit drei Figuren im Texte und vier Tafeln. Hamburg und Leipzig: Verlag von Leopold Voss, 1905. *Beiträge z. Augenheilkunde*, 62 Heft, März, 1905. Price 5 marks.

By the introduction of a new and valuable instrument of research, the ultramicroscope (invented by Siedentopf and Zsigmondy), a new opening for scientific investigation has been placed in our hands, and we are now enabled to make out particles about 1,000 times smaller than anything we could see before. Raehlmann has, by using the ultramicroscope for his studies on trachoma, and by his most painstaking and original researches, arrived at exceedingly interesting and important results; although, as the author remarks, they do not remove or clear up the old problems, but merely open up new ones, the solution of which will entail even farther reaching investigations.

Raehlmann divides his communication into three parts dealing respectively with the histology of trachoma, ultramicroscopic researches, and his views on its rational treatment, according to his physiologico-chemical and ultramicroscopic results. But the first two parts are intimately connected, so that particulars must overlap and the intricate subject will possibly be rendered simpler by taking them together.

The essential feature of trachoma is the follicle, and, in Raehlmann's opinion, there is no reason to differentiate between it and follicular conjunctivitis, a term which is often applied to cases of essentially the same class but running a more favourable course. Trachoma, as a whole, seems to have undergone a change with regard to its virulence in recent times, and regions which were once scourged by the disease in its most endemic form, produce now only the slighter affection, so-called "follicular conjunctivitis," with but sporadic appearance of the more severe kind.

Histological examination of the follicle reveals three types of cells:—(1) small cells with a large nucleus; they are abundant all along its periphery and sparse in its centre; (2) larger cells, about two to three times the size of the first ones, most likely identical with ordinary leucocytes and most numerous in the

centre of the follicle ; (3) still larger and rarified cells, about four to five times the size of the aforementioned ones ; they anastomose by their processes, and thus form a kind of network, while the first two types of cells occupy the spaces between. These cells, which have been described by Fleming, Villard, and others, have been termed "phagocytes." Their granular contents show most marked molecular movement, even out of their natural connection, under suitable conditions. One also occasionally meets with giant-cells, especially in old follicles with signs of secondary degeneration. There are no walls to the follicle. Now, these elements do not constitute the whole contents of the follicle. There are, besides—and the ultramicroscope reveals them most clearly—numerous minute particles, which must be considered as fragments of nuclei and of cellular protoplasm. They are mobile and able to transmigrate, and show under the ultramicroscope, a curious affinity to the bacilli, as we shall see later. These active and important particles have hitherto been mostly overlooked, or their essential nature being misunderstood, classified as *débris*. They may undergo hyaline or amyloid degeneration.

Proceeding with the characters of trachoma, we see that there are two more products of the morbid virus besides the follicle, *vis.*, the new formation of glands, and solid or centrally-softened epithelial processes, and then proliferation of the papillary body. Now, it is curious that these three changes rarely, if ever, occur together—a fact that led Raehlmann some years ago to assume that they were but different phases of one and the same process ; further researches have proved this view to be correct. The evolution of the follicle now seems quite clear. In some instances it may become absorbed, but, as a rule, its further progress is bound up with the rupture of its anterior wall, which nature effects in the same way, as, although somewhat slower than, surgical treatment does, by squeezing out the contents of the follicles. Natural perforation is brought on by one of three possible ways: (a) infiltration of the anterior wall and its epithelium with leucocytes ; (b) mucoid degeneration with œdema of the parts concerned, thus producing the well-known gelatinous appearance ; or (c) compression and gradual thinning. In connection with the progress of perforation, curious deeply-stained, comma-like bodies appear, similar to those seen in filamentary keratitis ; they seem due to the action of conjunctival fluid oozing into the tissues through a slit of the epithelial layer.

The rupture of the follicle having taken place, the epithelium of the conjunctiva gains entrance. Its proliferation produces the glandular recesses and sprouting prominences mentioned before. It would be impossible to explain the invasion of epithelium into the deeper layer of the conjunctiva in a non-malignant disease, if the perforation of the follicle be not

assumed, although the actual process is but rarely seen under the microscope. Inside the follicle the epithelium undergoes degeneration, principally of a mucoid character, the nuclei disappear, being replaced by 3-5 dots as seen in karyokinesis, becoming finally invisible, or hyaline degeneration may supervene. A more or less analogous process leads to the formation of pannus in the cornea and of the follicles in the lacrymal sac.

One of the most intricate questions in connection with trachoma is the origin and progress of the cicatrisation. The opinion most generally held seems to be that the formation of the scar proceeds along the boundary of the follicle, and is dependent on the latter for its appearance. The scar-tissue is formed by the original tissue-cells, and, perhaps, to some extent also, by leucocytes.

Raehlmann makes some most interesting remarks on the chemical changes which must take place in this process. The scar being of the nature of fibrillary connective tissue, consists

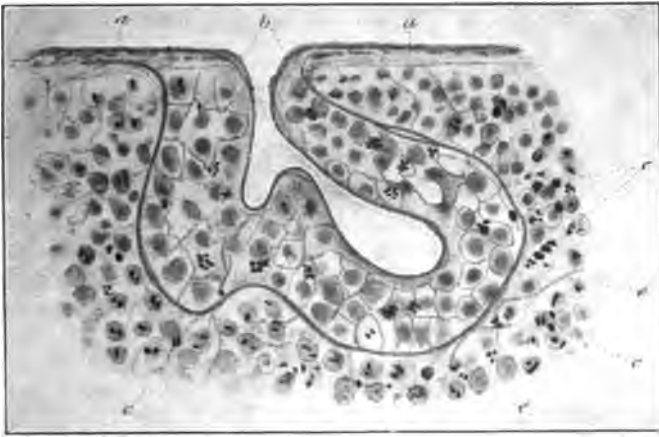


Fig. 1 shows the ingrowth of epithelium into a perforated follicle. The epithelium shows beginning mucoid degeneration. Under c, one sees cell-fragments undergoing hyaline degeneration.

of insoluble albuminoids, while the cellular albumen partakes of the character of partly dissolved and fluid albumen (nucleo-albumin and globulin). This change can only take place through the action of a substance hitherto unknown. Should conditions prevail which interfere with this normal metabolism, hyaline and amyloid degeneration supervene.

We now proceed to Raehlmann's description of the formed elements, as they appear in the discharge and in the squeezed-out

contents of the follicle. Here the ultramicroscope reveals a vast amount of forms hitherto unknown, or, at least, imperfectly understood. It may be said at once that the discharge and the follicular substance contain in the main the same elements, which proves that the first is nothing else but the transmigrating contents of the follicle. The most interesting objects found are :—

1. **Bacilli.** They are present in every case. They are extremely polymorphous, biscuit or dumb-bell shaped, forming short chains, sometimes appearing as diplobacilli, *i.e.*, two balls drawn out and connected by a fine thread, also sometimes as quite small, globe, or dot-like particles (*see fig 2*). Since these bacilli are seen unstained and alive under the ultramicroscope, one can notice their most curious movements, which seem to point to a hitherto invisible organ of mobility. There is no reasonable doubt that all forms as described are but different stages of the

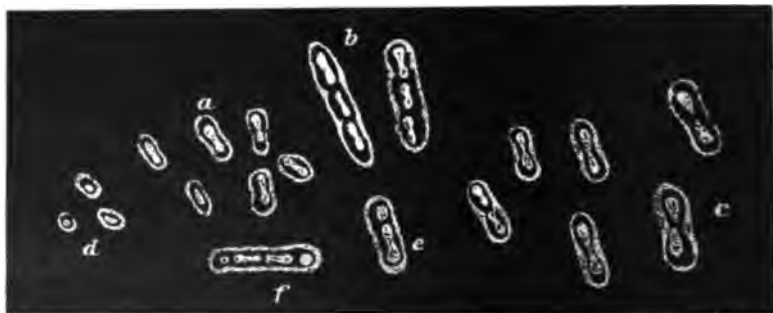


FIG. 2.

same organism. They seem to be drawn in a curious way to all solid objects lying in their course ; thus, they are attracted by the glass of the object slide and stick to it ; then peculiar wriggling movements ensue, and, after a time, they become immobile and die ; often they are hovering round cells or cell-fragments which they may enter and move on. To this peculiarity Raehlmann attaches some importance as regards the conveyance of the contagion, since the bacilli may, perhaps, thus by their own action, fix themselves to towels and similar vehicles of contagion, or to the bodies of flies, and thus be communicated to other victims.

2. **Numerous cells and fragments of nuclei protoplasm**, as described before. These are often much smaller than the bacilli ; they display great vitality under the ultramicroscope, and some closely resemble protozoa.

3. **Extremely small globules of grey or yellow colour.** They measure about $\frac{1}{10} \mu$, and move in peculiar "hopping" bounds. They can hardly be distinguished sometimes from the before-mentioned amœboid forms. Elements are now and then met with which are seemingly identical with the staphylococcus pyogenes albus.

Two most important questions now arise: first, which of these elements contains the virus of the disease; and, secondly, is Raehlmann's bacillus identical with Müller's trachoma bacillus (or is it influenza bacillus)? Unfortunately, neither of these questions can yet be answered. Raehlmann seems inclined to attribute the power of carrying infection to all three elements, as enumerated above, and opposes the theory of a purely bacterial origin for the disease. The ultramicroscope reveals the important fact of the mobility and vitality of bacilli and amoeboid cells alike, but any attempt to stain them destroys the organisms, after an interval, during which the cell seems to struggle against the action of the reagents. As the smaller bacilli described are beyond the developing power of the microscope, Raehlmann assumes that cases of trachoma, where up to now no bacilli has been found, are really infected by these micro-organisms or by the amoeba.

Interesting as the third part of Raehlmann's communication is, it may be summarised in a few brief lines. By watching the effects of the well-known and ancient remedies on the elements of the diluted discharge under the ultramicroscope, he arrives at the following conclusions: the metallic salts form a protective covering over the surface of the mucous membrane by the formation of albuminates, while the freed acid acts as a caustic. The active agents of the inflammation, as well as the enzymes, are agglutinated by the precipitation of these albuminates, and this action extends more or less deeply beyond the superficial layers. Sulphate of copper is preferable to the other metallic salts, as being the only one able to agglutinate micro-organisms if suspended in mucoid matter. Here, again, its action is safest if used in form of the crystal, and most effective if combined with expression of the follicles and acini, which gives the caustic access to the recesses and hidden folds of the conjunctiva. R. GRUBER.

Modern Ophthalmology.—A Practical Treatise on the Anatomy, Physiology, and Diseases of the Eye.—By James Moores Ball, M.D., Professor of Ophthalmology in the St. Louis College of Physicians and Surgeons, Philadelphia. F. A. Davis Company, 1904.

In this book of 800 large pages Dr. Ball aims at combining in one volume embryology, anatomy, physiology, and diseases of the eye. To say that the book is nevertheless not encyclopædic in its scope is no criticism of the writer's industry, but an indication of the enormous width of the subjects undertaken. The volume is a handsome one—heavy to hold indeed—measuring 10 inches by 7½ inches by 2 inches, beautifully printed on thick glazed paper, and profusely illustrated both

in colour and in black and white. Unlike some American books, it is written in good English.

Some of the chapters have been delegated to other authors, an arrangement, necessitated by time limits, which has been to a certain slight extent detrimental to the uniformity of the work. Dr. Ball has a clear and fluent style, and arranges his details logically. He has succeeded in producing a large manual, which is pleasant to read, and not merely useful to consult.

The numerous coloured plates of the fundus are well up to the average of excellence now attained in this kind of work, but several of the black and white drawings leave something to be desired. Operations are described at the end of each section of the clinical portion of the book, not at the end of the book, as is the more usual practice.

A careful perusal of *Modern Ophthalmology* leaves one with the impression that the book has been very well done. There are a few points upon which remark may be made.

The chapters on "Embryology," "Anatomy of the Orbit," and, perhaps, also that on "Anatomy of the Eye," are compressed and less readable than most others. "Physiology of Vision" is, intentionally no doubt, very brief. Contrasting forcibly with "Physiology," which the student is supposed to know, "Examination of the Eye," which is new to him, is satisfactorily discussed in 72 pages. The "Range of Accommodation," however, might have been more fully explained. $A = P - R$ is not illustrated for E and M. The author rejects, probably rightly, all colour tests in railwaymen and sailors others than those carried out under working conditions. At the end of this chapter full accounts are given of the tests for the detection of simulated blindness, and of the localisation of foreign bodies.

Regarding the clinical portion of the book, it may be said, in general, that it is very good, each chapter taking up successively, congenital anomalies, tumours, inflammations, injuries, and operations. The account of conjunctivitis is particularly well instructed and up-to-date. The diagnosis and differential diagnosis of choroidal and of retinal tumours is, perhaps, as complete as it can be made. In fact, diagnostic questions generally are excellently handled. In the consideration of glaucoma a full description is given of the operation for excision of the superior cervical ganglion. It is possible that the author's account of glaucoma simplex may not be in accordance with the views of all ophthalmic surgeons.

There is a good chapter by Dr. W. T. Shoemaker on "Diseases of the Orbit." Dr. William Zentmayer treats of "Anomalies of the Muscular Apparatus" in a practical manner.

Passing to the chapter on "Errors of Refraction," by Dr. John T. Krall, one cannot help quarrelling with an arrangement by which retinoscopy is included under "Methods of Examination" at the beginning of the book, instead of in this chapter near the end. Refraction is treated in a somewhat general manner and too briefly for the student who wishes to study it fully.

"The Ocular Manifestations of Nervous Diseases" are treated of in sixteen pages by Dr. J. C. Knipe; "Hygiene of the Eyes" in fifteen pages by Dr. Harold G. Goldberg; and "Microscopical Methods" in nineteen pages, by Dr. W. E. Fischer. This, the last chapter in the book, does not include the examination of the eye discharges for micro-organisms.

In reading the book a number of omissions occur to one. For instance, Benedikt's law is not mentioned; congenital word-blindness (so well described by Hinshelwood), does not appear to be noticed; the characteristic appearance of air in the vitreous is not described. But, as already said, the book is not an encyclopædia but an excellent and readable text-book of "Modern Ophthalmology."

NOTES AND ECHOES.

It is becoming more and more apparent that insular sclerosis is the cause of certain eye diseases met with

The Ophthalmoscope. every day in the out-patient department of an ophthalmic hospital, a fact that has been known now for some long time, thanks to the labours of Buzzard, Uhthoff, and other pioneers. The renewed attention now being bestowed upon this point is attested by the abstracts of recent work published in the May number of this journal. The subject is clearly of considerable practical importance, and it has accordingly been arranged to devote the September issue of **THE OPHTHALMOSCOPE** to a symposium on the subject. Articles will be contributed by Professor Uhthoff (Breslau), Dr. T. Buzzard (London), Dr. W. Aldren Turner (London), and Dr. Edmund Hobhouse (Brighton).

* * * *

News Items.

THE death is announced, at the age of sixty-one years, of Theophil Jcrofejeff, once professor of ophthalmology in the University of Tomsk, Siberia. He is succeeded in the Chair, as already announced in these columns, by Dr. Lobanow. Readers will be interested to learn that the serious illness of Professor

Pagenstecher, of Wiesbaden, is taking a turn for the better. The Copenhagen gold medal for an essay on colour-blindness has been awarded to Dr. Henning Chr. Trappaud Rønne. Nearer home, news comes of an outbreak of acute ophthalmia, resembling that reported last year from the Derbyshire mining village of Staveley, that has affected many of the school children at Mountain Ash, Wales.

* * * *

The Ophthalmological Society.

AT a recent meeting of the Council of the Ophthalmological Society, an important decision was reached concerning periodical meetings in the provinces. It was determined to submit the following resolution to the next annual meeting of the members in July:—"The Council having considered a proposal to hold occasional meetings of the Society in provincial centres, consider it advisable that an extra-metropolitan meeting be established."

* * * *

"Ousted by German Scientists."

HISTORY repeats itself! Some of the British and American ophthalmic surgeons who attended the International Ophthalmological Congress, at Lucerne, will doubtless smile to themselves when they read the following paragraph, clipped from the *Daily Mail*, respecting the recent International Congress of Psychology held at Rome.

ROME, Thursday, April 27.

"At the resumed sitting of the International Congress of Psychology here to-day, Professor Lipps, of Munich, read a lengthy paper decrying the experimental branch of the science.

"Several other German professors followed, and the Italian Press is complaining that the Teutons are monopolising the congress. Another grievance against them is that they speak entirely in their own language, which the majority of their audience do not understand. Several Lecturers have lost their turn in consequence of the length of the German essays."

* * * *

THE *Bulletin générale de Thérapeutique* of Identification of Bodies. April 15, 1905, contains an account of a curious plan lately adopted in Paris by M. Bertillon, of facilitating the identification of bodies by a modification of the ordinary photographic process. Before the photograph is taken, a few drops of glycerine are injected with

a Pravaz syringe into the eyes of the corpse. After this little operation it is stated, apparently on good authority, that the eyelids open, and expression is restored to some semblance of life itself. The glitter of the eyes, however, is still wanting. This is secured by a further injection of glycerine into the sclerotic. The illusion is completed by rubbing the lips with a little carmine, and the body thus prepared is said to yield a "living portrait."

* * * *

THE following extract from a recent number of our contemporary *American Medicine* goes to show that the optician question is as vexed in the United States as upon this side of the water, where, as is well known, a determined effort is being made by the General Board of Opticians to defeat the clause in the Medical Acts Amendment Bill, now before Parliament, which seeks to restrain opticians from testing the eyes for errors of refraction.

The Opticians Aspire to Practise Medicine by Deception. "ALL over the United States, and indeed, "all over the world, the opticians are establishing periodicals and schools, and are moving legislatures, as much of heaven and "earth as they can, for the privilege of practising ophthalmology "without a medical education or license. Their contention is, of "course, the humorous one that errors of refraction and muscle "imbalance have no relation to diseases of the eye, and that to "themselves should therefore be left the practice of testing and "prescribing, as well as making, glasses. The claim is the "sheerest impertinence and error. Every case of refraction is or "may be inextricably bound up with diseases of the eye and of the "general system. As well might the maker of trusses pose as a "surgeon whose speciality is hernia, or a maker of pessaries and "forceps call himself a gynæcologist. The best proof of the "absurdity of the aspirations of the opticians is that no glasses "ordered by them are ever correct. Among thousands not one will "be formed mathematically or optically answering the patient's "needs. They cannot, and dare not use a mydriatic, unless they "hire some scapegrace physician to prostitute his profession, and "without such a help, in the vast majority of cases, there can be "no accurate diagnosis of errors of refraction. These men are in "reality seeking to practise medicine without studying medicine.

"The guilt, at last, for their vogue and pretensions lies at the door of the medical profession which still ignore the many and profound interrelations between errors of refraction and disease, local and general. All this strange neglect will in the future have to be atoned for by long and laborious struggles of the profession to undo the evils we are now permitting to become entrenched in malicious customs and laws."

* * * *

**The Perils of
Out-spokenness.**

THE feelings of a sympathetic public have recently been harrowed by the circumstances attending the suicide of a curate attached to a fashionable London church. At the coroner's court evidence was given showing that he had recently resigned his post, because a medical man told him that he was threatened with cataract in both eyes. This information the deceased described to a fellow curate as a "terrible knock-down blow." An occurrence of this kind naturally reminds the ophthalmic surgeon somewhat sharply of the responsibility that rests upon his shoulders when called upon to decide what should or should not be told to a patient found to be suffering from some calamitous or hopeless malady of the eyes. Perhaps the wiser plan is to say nothing to the patient off-hand, but to convey the information to his friends. Later, the truth may be disclosed gradually to the patient himself. Emotional persons are apt to suffer a severe shock on learning that their sight is likely to be either seriously impaired or lost. For all that, no such person is likely to commit suicide unless his mind be previously unhinged. Temporary insanity, as a matter of fact, was found to be present in the case of the curate above quoted. The moral of it all is that the practitioner, be he engaged as an ophthalmic surgeon or in any other medical capacity, should never lose sight of the mental and intellectual characteristics of his patient. Truth to say, any but gross departures from the normal mental sanity are almost invariably overlooked by the medical man who is not an expert in lunacy.

* * * *

Diseased Aliens.

As all the world knows, the Aliens Bill passed its second reading on May 2nd by a majority of 152. In connection with that moderate measure (which is expressly declared by the Government to be non-Semitic), certain figures dealing with sick immi-

grants are of interest. These figures, which have been compiled by the Hamburg-American and the North German Lloyd Steamship Companies, deal with upwards of 8,000 persons whose ailments were such as to ensure their exclusion from the United States. The immigrants, who came from Russia, Austria, and Germany, were rejected in the last-named country whilst *en route* for the two great ports of embarkation, Bremen and Hamburg. 3,057 were refused on account of trachoma, and 1,453 for other eye diseases, not to mention 180 on account of blindness. In other words, more than one-half of the total number of immigrants were refused by reason of eye disease or actual blindness. How strict the United States have become in the matter of trachoma is attested by quite a tragic little incident recently reported from Philadelphia. It appears that a young German girl landed to join her lover, and preparations were at once made for the inevitable wedding. The immigration officers, however, had something to say in the matter. They appeared upon the festive scene and took the prospective bride away to the hospital, there to await the return to Europe of the steamer on board which she had reached America's inhospitable shores. The officials had discovered that the young woman was afflicted with trachoma—whence their drastic action.

* * * *

Official Fees.

The proposal to establish a scale of fees for various operations upon the eyes, although suggested more than once, has always been regarded as chimerical in England. We gather, however, from Dr. Jankau's *Taschenbuch für Augenärzte* for 1904-1905, that such a scale does exist in certain of the more important states of the German Empire. To judge from the figures given, the fees do not err on the side of excessive liberality. Those to be paid for a few of the more important operations are epitomised below:—

	Prussia.	Wurtemberg.	Bavaria.	Hesse.
Squint	15-150 mk.	20-100 mk.	15-150 mk.	15-200 mk.
Tattooing	20-50 mk.	15-20 mk.	20-50 mk.	10-50 mk.
Iridectomy	20-150 mk.	20-100 mk.	20-150 mk.	30-150 mk.
Cataract	50-300 mk.	50-200 mk.	50-300 mk.	50-300 mk.
Enucleation	30-150 mk.	30-100 mk.	30-150 mk.	30-150 mk.

(N.B.—20 marks equal one pound sterling.)

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ORIGINAL COMMUNICATIONS.

THE IMPORTANCE OF THE CORNEAL TEMPERATURE AND NICTITATION IN CORNEAL THERAPEUTICS.*

BY

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For our knowledge of the temperature-topography of the eye, a subject seldom if ever referred to in text books on physiology or ophthalmology, we are mainly indebted to the investigations of Michel¹ and Silex². Using the thermo-electric couple in his experiments on rabbits, Michel found the average temperature of the anterior chamber to be 31·9° C., and the middle of the vitreous and lens 36·1° C., with a fall in temperature as the needle was carried from the middle of the anterior chamber towards the cornea, and a rise when

*A communication read in the Section of Ophthalmology at the Annual Meeting of the British Medical Association, Oxford, July, 1904.

it was brought near the anterior surface of the iris. Closure of the lids caused an increase of 2° C., to 3° C., in the anterior chamber, and the application of an icebag a fall of from 13° C. to 15° C.

As the use of thermometers, however carefully constructed and applied, is obviously unreliable in such delicate investigations, we need not wait to discuss the results obtained where such means have been employed. Sillex repeated and extended Michel's experiments on various animals, including man using thermo-electric couples made of copper and iron, connected with a Thomson's galvanometer, and allowing for other currents, occurring with closure and constant temperature in his calculations.

In the dog's eye Sillex found the following temperatures :— anterior lamellæ of the cornea, 29.58° ; anterior chamber, 34.49° ; anterior surface of the iris, 36.77° ; in the lens, 36.55° ; in the vitreous, 36.06° ; and the optic foramen, 39.3° , the rectal temperature being 40° C. In the rabbit, rectal temperature 38.6° C., the figures differed somewhat : conjunctival sac, 35.4° ; anterior chamber, 32.1° ; lens, 35.46° ; and centre of the vitreous, 33.5° .

Sillex summarises as follows : taking all circumstances into consideration, we are justified in saying that the conjunctival sac has a temperature of 2° C., corneal lamellæ 10° C., anterior chamber 6° C., lens 3° C., iris substance 0.36° C., and centre of the vitreous 4° C. less than the rectal or body temperature. These figures agree approximately with those given by Michel. In all inflammatory affections Sillex found that the temperature was elevated as compared with the healthy eye : in hypopyon keratitis as high as 1.45° C., and in acute iritis 1.56° C.

For our present purpose we are concerned only with the corneal temperature, which is, as we have seen, 10° C. or 18° F. below ordinary body temperature. Let us now consider if this comparatively low temperature is of any therapeutic value, and if it plays any important part in the welfare of the corneal tissues in health and in disease.

The first thing that strikes one must be its effect on the functional activity of pyogenic micro-organisms. The ordinary pus-producing germs can live at varying degrees of temperature, the range between their *maximal and minimal temperatures* being fairly wide ; but the temperature in which they grow best and in which their functional activity is at its highest, the *optimum temperature* as it is called, is, as a rule, body temperature³. Any variation above or below the optimum temperature has an inhibiting effect on their growth and functional activity in proportion to the extent of the variation. In other words, any marked variation in temperature,

such as we find in the normal cornea, has a retarding or antiseptic effect on invading micro-organisms. But for this natural immunity; dependent on the low temperature together with the mechanical act of nictitation, it is impossible to conceive how an avascular and exposed tissue such as the cornea is not more frequently the seat of suppurative disintegration.

Prolonged closure of the eyelids, as in photophobia and blepharospasm from exposure of the epithelial plexus of nerves, such as we find in superficial ulcerations and abrasions, raises the corneal temperature practically to body temperature, and so the natural inhibiting action enjoyed by the cornea during health becomes impaired. The corneal tissues are then less able to cope with the attacking germs, seeing that the latter are afforded their optimum temperature, not to mention the probability of the altered condition of temperature having an injurious effect on the reparative function of the corneal tissues themselves. How often do we see simple corneal abrasions lead to severe inflammatory mischief and even to suppurative disintegration, whereas deep and perforating wounds of the cornea with prolapse of iris are comparatively free from such untoward results. The only rational explanation that one can offer for such a disproportion in regard to these results must be the altered physiological state of the corneal temperature, together with the change in the normal acts of nictitation and lacrymation, for in the case of a corneal abrasion or superficial ulceration, the exposure of the epithelial plexus causes photophobia and closure of the eyelids, so that the corneal temperature becomes markedly increased, and nictitation is held in abeyance, whereas in deep or perforating lesions of the cornea, the epithelial plexus being destroyed, little or no photophobia is found, so that the corneal temperature thus remains normal, and nictitation goes on practically unimpaired.

It may be taken as a surgical axiom that so long as there is pain, or photophobia in the case of the cornea, there is no healing or reparative process going on. The treatment, then, for all corneal lesions, such as abrasions and ulcerations, should, we venture to say, consist of means to allay pain and photophobia, so as to enable the patient to open the eyelids freely, and thus restore normal temperature and nictitation; in short, the open method of treatment should invariably be adopted, except in cases where the wound is so extensive that closure of the eyelids and a dressing become imperative for the purpose of securing complete apposition of the lips of the wound.

How, then, is photophobia to be overcome in these cases of corneal lesions?

During the past fourteen years or so we have used pure cocain, applied three or four times daily for this purpose, on account of its local anæsthetic and vaso-motor action.

When the exposed or irritated nerve—endings in the cornea are kept anæsthetised in this way there is practically no photophobia, and the eyelids are no longer kept closed. The corneal temperature is then allowed to fall back to its normal condition, and so a more physiological state of matters is obtained. But we are told that cocain is contra-indicated in all abrasions and ulcerations of the cornea, because it produces rapid desiccation of the corneal epithelium. That objection may be taken to aqueous solutions of cocain, but oily solutions, such as ointments, never cause desiccation, as the corneal surface is kept moistened by the oily base.

Besides restoring the cornea to its normal temperature, cocain restores another very important physiological condition, namely *nictitation*. The normal act of winking cleanses the wound of surface germs and their poisonous products, thus diminishing both the number and the effect of the attacking force. But it may be argued that the movements of the eyelids over the cornea prevent *rest* to the injured part, rest being all-important in the process of repair. But normal nictitation does not violate this important therapeutic law, for the natural movements of the normal eyelids over a corneal ulcer, the surface of which is coated with tears, does not cause pain or even a trace of discomfort, and this is particularly noticeable when the cornea is kept under the influence of cocain.

Again, in treating these corneal lesions by closing up the eyelids, we lose sight of another important bacteriological fact, namely, that germs grow best when left undisturbed. Now the normal act of nictitation along with lacrymation keeps them on the move, so to speak, and consequently their growth and functional activity become retarded. It is to the natural process of lacrymation, acting in this way, that we owe in very great measure the almost marvellous results in the healing of our wounds in cataract extraction. I say "marvellous" advisedly, for the field of operation, especially in old people, even after the use of perchloride of mercury (so much vaunted in a recent work on cataract extraction), is from a bacteriological standpoint everything but aseptic, and therefore on *a priori* grounds most unsuitable for surgical interference.

By removing photophobia in corneal ulcers and abrasions we restore three very important physiological conditions, namely :—

1. *Normal corneal temperature,*
2. *Normal nictitation, and*
3. *Normal lacrymation.*

The practical importance of these three conditions may be better illustrated if we briefly discuss the treatment, say, of phlyctenular keratitis on the lines indicated above.

The clinical picture of this ophthalmic affection is well known: there is superficial ulceration with conjunctival vascularisation of the cornea, accompanied by marked photophobia, due to exposure of the epithelial plexus. Owing to the increased vascularity, causing over-nutrition, the cells intended for repair, that is for the formation of cicatricial tissue, become sluggish and fail to accomplish their developmental intention, and so the disease sets out on its chronic course.

What are we to do in order to promote recovery?

First of all, allay the photophobia, so as to restore the three physiological conditions referred to. Besides, regulate the perverted vascularity of the affected area, to enable the cells intended for repair to form cicatricial tissue. To obtain our purpose we have for a number of years employed the following ointment:—

R̄	Hydrargyri Oxidi Flavi	..	..	gr. ii
	Atropinæ (Puræ)	..	..	gr. i
	Cocainæ (Puræ)	..	..	gr. iii
M.	Lanolin	..	..	3 ii

This ointment is applied at least three times a day, a piece the size of a split pea being inserted by means of a fine glass rod between the lower lid and the eyeball. A large double shade of brown paper, sufficiently large to cover the whole face, is worn in order to counteract the effect of the mydriasis, and the patient is encouraged to be in the open air as much as possible during the day, and to sleep with open windows at night. If the ointment be properly applied, the results are most gratifying, for the photophobia soon disappears and healing sets in almost invariably without delay.

We attribute the beneficial effect of this ointment, which we have very extensively employed for upwards of fourteen years, principally to the anæsthetic action of the cocain removing photophobia, thus restoring the normal corneal temperature and normal nictitation and lacrymation, and also to its powerful vaso-motor action, regulating, to begin with, the vascularisation of the cornea, and, subsequently, aiding in its complete disappearance. The yellow oxide of mercury, which owes its popularity in phlyctenular affections to its mild stimulating property and slight antiseptic action, is allowed under the influence of cocaine to act to the best advantage, while the atropine affords the necessary rest by its mydriatic and cycloplegic action. Lanolin is preferred as a base, because being an epithelial product, it is more readily absorbed than

oily substances such as animal fats and inorganic products, and also because it mixes with the tears to some extent.

Time will not permit of giving further illustrations of the practical application of this principle of restoring an injured or ulcerated cornea to its normal or physiological condition as being the best means of promoting its recovery. Nor is there time to discuss the therapeutic value of iced compresses and hot fomentations in this connection also. Suffice it to say for the present that in recent traumatic wounds of the cornea, where closure of the eyelids is necessary for the purpose of procuring complete or more accurate apposition of the lips of the wound, iced compresses continuously applied produce the best results; but where suppuration or a marked inflammatory process has already set in hot fomentations are preferable.

Iced compresses continuously applied act by lowering the corneal temperature, unavoidably raised through the closure of the eyelids, to a normal or subnormal condition, a condition unsuited for the growth of those pyogenic germs that have found their way into the wound during or after the injury. The best results will naturally be obtained the earlier the compresses are begun, *i.e.*, before the germs have had sufficient time to multiply and to produce toxins, and the more continuously the compresses are applied. The beneficial effect of hot fomentations, say, in hypopyon corneal ulcer, or in acute interstitial keratitis, is, so far as we know, purely empirical. The only rational explanation that one can offer is that heat by stimulating the amœboid or pseudopodial movements of the fixed corneal cells, increases the lymph circulation through the corneal spaces and canaliculi with the result that inflammatory products are more readily expelled and the process of recovery accelerated. Heat may also stimulate the phagocytic action of the leucocytes in the corneal spaces, and so produce more direct beneficial results. Be that as it may, the principle we have advocated of restoring the affected parts to their physiological condition is a valuable adjuvant in the treatment of corneal lesions, especially when employed in conjunction with the ordinary well-known therapeutic means at our disposal. Not only so, but in many cases, where the virulence of the invading germs is not too great or the destruction of the tissues not too severe, it is in itself sufficient to safeguard the tissues against micro-organismal attack and to permit of a complete recovery being obtained.

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NEW CONQUESTS OF OCULAR THERAPEUTICS,

BY

DR. A. DARIER,

OF PARIS, FRANCE,

*(Concluded from page 282.)***Analgesic Action of Radium and of the
Radio-Active Substances.**

In the case of a true epileptic, aged twenty-two years, whom I had known from infancy, I tried radium in all its forms, both with applications of weak tension, and with very powerful ones, amounting to 500,000 U., upon various points of the cranium, and the absorption of radio-active substances, and, in particular, bromide of thorium. I was unable to stop the attacks, although I succeeded in reducing their frequency and their intensity. They were accompanied by emissions of urine, and took place several times a week, the latter afterwards occurring only once or twice, at the monthly period. The slighter attacks, which occurred from four to six times a day, diminished in number during the treatment, and increased again as soon as it was discontinued. The most evident result was the disappearance of the pains in the head, and of the stupor in which the patient was plunged between the attacks.

Whilst we are considering the possible inhibitive action of radium upon cases of convulsive neurosis, let me cite a strange case. A gentleman, 45 years of age, was brought to me in October, 1903, for eye troubles, accompanied by violent pains in the head, with nocturnal paroxysms impelling the patient to beat those who were near him, and to break the furniture. He would then go out, and walk straight ahead for an hour or two, until, finally exhausted, he would return to bed. There was no trace of alcoholism. With a view to soothing the pain in the head, I made prolonged applications of radium, and next day the cephalalgia had disappeared, and the sleep was normal. This treatment was continued for a week without any other medication. Since that time the patient's health has been good, and he has resumed his work. I saw his wife recently, and she is as delighted as her husband at this unexpected change. The cylindrical glasses which were prescribed, but which the patient very rarely wears, have probably contributed to prevent the return of the neuralgia which was, I think, the cause of these pseudo-somnambulistic attacks. I will merely mention in passing a case where suggestion, aided by radium, brought about the cure of a pseudo-locomotor ataxy in a few days, which was entirely due to a very marked hysterical and neurasthenic condition. Two returns of the malady were cured in the same manner.

Before commencing the extremely interesting study of the analgesic properties possessed by radium, let me note *en passant* a few observations which would tend to prove that this metalloid exerts a powerful action upon the nervous elements, both motor and sensory. In two cases of facial paralysis, both of which dated three days back, after two or three applications of radium, I have seen the mobility return to the normal. In a case of eight days' standing, it took a fortnight to effect a cure; and radium proved absolutely ineffective when applied to cases of still longer standing, and also in several cases of paralysis of the oculo-motor muscles. The same negative results are obtained when it is applied in cases of paralysis of the motor nerves; in fact, I have obtained no results by applications of radium to the latter, whilst, on the other hand, I have seen a frontal nerve, paralysed three days before by a wound in the eyebrow, recover its sensibility in less than one hour.

I believe, therefore, that radium possesses an especial aptitude for regulating the functions of the motor and sensory nerves, when this function has been only slightly interfered with. Radium, however, is not able to restore nervous fibres, where atrophy has taken place.

We now come to the analgesic properties of radium, which I was led to discover by mere chance. In a case of very violent rheumatic iritis, with inflammatory exudations in the pupil and the anterior chamber, it occurred to me that radio-active applications might facilitate the resorption of the exudations. The result was *nil* as far as the latter were concerned, but most surprising were the effects upon the very acute pain which the patient suffered in the eye and over the whole of one side of the head. Scarcely had an hour passed after the application of a 1-gramme packet of radium salt, 240 U., upon the eye and eyelid, when the patient felt a sensation of dulness in the painful region, and the pain soon disappeared entirely. I allowed the bandage to remain until the next day, and was then very agreeably surprised to learn that the patient had slept very well, and had not felt the least pain, although, for some days previous to this, every other classical medical remedy for soothing the pain had been exhausted. The eye was slightly less red, but the pupil presented the same exudations as on the day before. In this case the radium had acted primarily on the pain. We see here one of those cases in which clinical experiment has started us on the high-road to the discovery of the analgesic properties of Becquerel's rays, when we were seeking something quite different. This is all the more interesting as in such a case the cessation of the pain could not be attributed to the too frequent hypnotic suggestion; at the furthest, one could not venture an

explanation other than that of pure chance, a happy synchronism between the application of the radium and the cessation of the pain. Now, the pains in the eyes having returned on the third day in the case we have been discussing, a fresh application of radium caused them to pass away in less than an hour, an experiment repeated four or five times, in the course of the treatment, without its being possible to say positively that the radium had any favourable influence on the morbid process itself. The general treatment could not count for anything, since it had been the same both before and after the radioactive applications.

It would be fairly reasonable to say that the mere application of a bandage protecting the eye against the light and the weather would suffice to explain the cessation of the pains, but it would be an easy matter to adduce proof to the contrary, independently of the fact that in certain cases the warmth of the bandage would render the pain even more acute. It happened that just about this time I was treating a woman suffering from specific choroiditis, accompanied by orbital neuralgia, which for six months had defied all our therapeutic measures. I at once submitted her to applications of radium, one packet of one gramme, 240 U., and the next morning she returned to say that she no longer suffered any pain. Unable to credit so rapid and powerful an action, I naturally thought I had to do with one of those miracles which we so frequently find effected by the power of suggestion, and which makes it so necessary that the clinical observer should pass judgment with the strictest caution. Without saying anything to the patient, I applied a similar bandage, but without the radium. She complained the next day that the neuralgia had not been so well soothed; her drawn, disappointed, anxious face betrayed her sufferings, and contrasted with her contented and happy look of the previous evening. On the third night, I bandaged her again with radium, and the neuralgia completely disappeared. I did not see this patient again for another five months, when she experienced a return of the neuralgia. Again it was cured by three applications of radium.

Since that time I have had occasion to repeat this treatment many times in the case of patients suffering from pains in the eyes, from various causes. With some the pain disappeared for ever after one application; with others the pain returned in the course of two or three days, and was again stopped for a longer or shorter period. I have known workmen who, after an injury to the eye, suffered from a cephalalgia, an ocular or temporal neuralgia, which prevented them from resuming their work. In these cases a single application of radium 240 U., for one or two hours caused the pains in the head to disappear.

In the case of persons suffering from violent attacks of head-ache, I have often, but not always, succeeded in securing a discontinuance of the attacks for a relatively long period. In certain cases of people affected with pains in the head as a result of violent electric discharges caused by short circuits, I have been able to obviate the headache for a longer or shorter period.

I had occasion to try the effects of radium on myself for an attack of ophthalmic migraine with scintillating scotoma, which prevented me from being able to read, when I was engaged in writing an article. The painful part being situated between the ear and the occiput, it occurred to me to apply the most powerful radium which I had to this spot (Br. Ra, 500,000 U.). It had not been in position more than a couple of minutes, when I was able to read without the least scotoma or headache.

I now come to a case which deserves to be related in detail, because it is one of the most curious and typical hitherto met with. I had been attending a *confrère*, a man acquainted with the latest discoveries of science, for about six weeks; he was suffering from one of those forms of ocular rheumatism which are the despair both of the patient and of the physician. In vain, for this patient, resort had been had to salicylate of soda, aspirine, quinine, rhus toxicodendron, as well as to the most varied and active local applications, including dionine and adrenaline, the most recently introduced into therapeutics, but which are already credited with a fairly large number of successes; but in this particular case no appreciable benefit resulted. The pain increased in intensity, and the infiltration of the sclerotic became more pronounced, and at one period the cornea began to lose its transparency over quite a third of its surface. The idea came to my mind to propose radium applications to our *confrère*. He laughed outright, saying "No! do not try that on with me! I am not *suggestionable*." However, as his work commenced to fall into arrears, as he could no longer devote himself to his usual occupation, and as, with very good reason, he did not wish to accustom himself to morphine (his stomach was commencing to become satiated with aspirine, antipyrine, and the other analgesics), he himself at last requested a trial of radium. I immediately gave him an application, lasting two hours, on the external edge of the orbit, of a glass tube containing 0.10 gr. of radium bromide of 7,000 U. At the end of the first hour the relief was already perceptible, and our *confrère* was able to work all that evening without pain. Two days later the pain returned, and I succeeded in causing it to disappear by the same means, and similarly upon several occasions. On seeing this, I lent our *confrère* a fairly copious radioplasm filled with radium at 240 U., so that he might apply it himself to his eye every evening.

At the end of a few days the pain had finally disappeared, although the episcleritis was not cured; it was, however, in process of gradual attenuation, and, in any case, was no longer painful. I recently saw our *confrère* again, and he showed me his eyes, completely cured. Did the action of the Becquerel rays have anything to do with the removal of the diseased process? It would be impossible to affirm this, but it is equally impossible, in the case just mentioned, to deny the powerful action of radium upon the pain itself. It would not do, however, to rely upon achieving success in every instance, and I must confess that, in many cases, I have been disappointed with the results of applications of radium.

In an extremely serious case of facial neuralgia (neuralgia of trigeminus), with which a poor patient had been tortured for more than sixteen years, notwithstanding three terrible operations (extraction of the sub-orbital nerve, of the branch which goes to the lower jaw, and resection of the whole edge of the interior maxilla with all its teeth) I was successful, by giving four applications of two or three hours a day, in enabling the patient to speak and to eat, and to recover a little of the pleasure of living. Two months later, the pain having returned, the patient asked me whether, by applications of radium in a higher state of activity, one could not arrive at a more enduring result. I made a first application of twenty minutes of 0.01 radium bromide at 500,000 U. on the point of irradiation of the most violent pains (at the emergence of the mental nerve), the enveloping instrument being Danne's apparatus. No soothing effect was obtained. A week later, I gave a second application lasting half an hour, and not only were the pains not lessened, but the patient had more frequent and more painful paroxysms. A slight redness of the skin was observable at the spot where the radium rays were concentrated. I then returned to much milder applications, and the results were better, but the patient, not yet cured, is still undergoing treatment.

Dr. Foveau, of Courcelles, quotes a case of severe facial neuralgia, which had first of all been operated upon by elongation, and then by section, of the nerve. Each operation led to a few months' respite, but during the last six years the pains had again made their appearance. A four days' continuous application of radium of 240 U. (query in what quantity and in what envelope) brought about a complete cure, which has been maintained since October, 1903. The same author quotes a case of cancer of the rectum, which ceased to be painful after the introduction into the anus of a tube of radium (10,000 U. ?) for a quarter of an hour each day. After fifteen such applications, the patient was able to dispense with injections of morphine.

I have had two cases of the same kind, *viz.*, cancer of the rectum, and both were considerably relieved by weak radioactive tubes (about 240 U.) introduced in a similar manner. In one case of tuberculous cystitis, with very painful pollakiuria, I was successful in relieving the pain and in reducing the number of micturitions by the introduction of a small tube filled with radium of 240 U. But this treatment did not prevent the malady from running its course, any more than in the two cases of cancer of the rectum.

It would be interesting to know whether the same analgesic action might be observed in pains of greater intensity and of longer duration. *A priori*, I thought it would be possible, by the application of radium, in sufficient quantities, to relieve the "shooting pains," sometimes so agonizing, of locomotor ataxy. Unfortunately, I have only had one opportunity of trying radium under these conditions. It was a case of a person suffering from ataxy, who had very violent pains in the legs; but as these pains were changing their position continually, I applied to the spinal column ten little pastilles of celluloid containing radium bromide of 1,000, 7,000, and 10,000 U. Only three applications were made; once the pains were relieved, and upon the other two occasions they remained untouched in the slightest degree. This first negative experiment would go to prove, at the furthest, that weak doses of radium applied to the spinal column have no influence upon the "shooting pains" to which persons suffering from ataxy are subject.

Professor Raymond, upon whom devolved the drawing up of a report upon a note, presented by myself to the Academy of Medicine, upon the analgesic properties of radium, undertook a series of experiments in order to verify the facts advanced in this note. After making the said experiments, he was convinced that pure radium applied *loco dolenti*, in certain cases, calms almost instantaneously the shooting pains to which ataxic persons are subject. Here are his own words: "Struck by 'the sedative and analgesic action of radium upon pain, which 'has been here pointed out by Dr. A. Darier, we conceived the 'idea of examining the influence of radium upon the painful 'phenomena suffered by ataxic persons. Truly, I must say 'that we have been somewhat surprised by the results obtained, 'the painful symptoms having, in those cases which we have 'been able to follow, disappeared as if by magic. In this 'respect, I hasten to oppose any insinuation of the hypothesis 'that the action of suggestion can in any way be held responsible 'for the happy results, as we have taken particular technical 'precautions to obviate this. As a matter of fact, we made use 'of tubes absolutely alike, one containing no product, and the 'other the salt of radium. Every time that an improvement

"took place in the condition of our patients, it was after sittings whereat we made use of the tube containing the radium. We have never been able to obtain the least result when, unknown to the patient, we substituted for the sitting the empty tube in place of the one containing the radium . . . The applications were made to the spots indicated by the patients themselves as being the centres of radiation of the painful phenomena, and, in each case, a single application lasting four minutes was sufficient to annihilate them. The number of observations already made are as yet insufficient to enable us to arrive at clear and definite conclusions with respect to the analgesic effects of radium, but it is interesting, henceforward, to place to the credit of the metal discovered by M. Curie, a new physiological property, the effects of which can be demonstrated clinically."

We could not do better than conclude this first study of the medical applications of radium than by the masterly conclusions of Professor Raymond, which confirm absolutely our first observations upon the analgesic action of Becquerel's rays. We shall shortly study the inhibitive action of radium on certain cases of neurosis, and its stimulating action in cases of paralysis; then we will give the result of a series of interesting observations upon the action of the radio-active emanation upon certain forms of pulmonary tuberculosis. In these latter cases, the analgesic action of Becquerel's rays was revealed by a rapid disappearance of the whole of the painful phenomena.

P.S.—The Cure of Trachoma by Radium.—After a long study of the action of the X-rays in ocular therapeutics (*vide La Clinique Ophthalmologique*, 1903 and 1904), we have made numerous experiments with radium, which, for oculists, is much more readily handled than the Röntgen rays. Our first idea was to apply radium to the treatment of trachoma, tuberculosis, and of the ocular neoplasms. Unfortunately, since the surgical treatment of trachoma (which we were one of the first to advocate) has become so general in Paris, the typical granulations have become so rare that I have not once had the opportunity of applying the special radio-active apparatus, which I had had constructed for this purpose. On the other hand, radium has shown us a really surprising action upon the nervous system, as we shall show elsewhere. For the present, we rest content with reproducing *in extenso* from the *Wochenschrift f. Ther. u. Hyg. des Auges*, of Januar 5, 1905, a preliminary note of Professor Cohn, and we leave to him all the merit of, and all the responsibility for, his interesting observations.*

[FINIS.]

* For abstract of Professor Cohn's preliminary note, see THE OPHTHALMOSCOPE, February, 1905, p. 93.—EDITORS.

CLINICAL MEMORANDA.

CASE OF RETINAL HÆMORRHAGE WITH DELAYED MENSTRUATION.

BY

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Miss L. M., *æt.* 19 years, consulted me on May 14th, 1902, on account of sudden loss of sight in the left eye. Three days previously there had occurred an intense itching of the left eye, and suddenly the sight became very dim, everything at first appearing red. Since that time she had had no pain or discomfort in the eye, but the sight had remained very bad.

On questioning her it appeared that her menses had been delayed three or four days, and that on the morning when the eye trouble occurred, the flow had commenced, with more profusion and pain than usual. In addition, she was suffering from a slight cough.

Present Condition.—Patient is a pale, fair girl, but not anæmic. Heart and lungs normal, and urine (on a subsequent examination) proved normal.

Left vision = counting fingers at 1 foot. Pupil inactive to direct, but reacts to consensual stimulation. T.n. (Right vision = $\frac{5}{8}$. no Hm.).

On examination of the fundus, there appeared to be a large dark hæmorrhage into the disc and retina immediately about it, which completely concealed the former. Covering this dark mass and extending over the macular region for about five discs' breadth, was an apparently thin layer of bright-red blood, lying between the retina and vitreous. Peripherally the retina looked hazy, as if cedematous, the vessels in places being obscured, while here and there a few circular hæmorrhages were visible. The retinal vessels appeared to be of normal size.

Treatment and Progress.—Absolute rest in bed was advised, with free purgation. A couple of leeches were to be applied to the left mastoid by her doctor. This was done the same day. After removing the leeches, difficulty was experienced in stopping the oozing of blood from the wounds, and the fact then came out that the patient had always had rather a tendency to bleeding, slight scratches sometimes proving quite troublesome.

On May 18th, when the patient was next seen, vision had improved to counting fingers at 12 feet. It was then found that the pre-retinal hæmorrhage had invaded the vitreous and large masses of blood were visible floating in the latter, while no details of the fundus could be made out.

Calcium chloride c., gr.v., and pot. iod., gr.v., were ordered three times a day, with a view to check further bleeding.

On May 21st the vitreous hæmorrhages had so far cleared up as to allow of the fundus being seen. The papillo-macular region was evidently swollen, while the inferior temporal vein near the edge of the disc was covered by a dark projecting mass of blood-clot.

May 25th. Vision = J. 4 at 1 foot.

June 1st. Vision = J. 2 with difficulty, but patient complained of seeing a dark cloud in the upper part of the visual field, and, on examination, a steel-grey reflex was to be seen in the lower and outer part of the periphery. It was difficult to determine whether this was due to a retinal detachment or to a mass of decolourising blood-clot.

On June 2nd, Mr. Tatham Thompson saw the patient with me, and inclined to the belief that the mass was decolourised blood and not a detachment, and the subsequent behaviour of the eye proved this to be the case.

During the next ten days, the vision steadily improved to $\frac{9}{8}$ pt. and J. No. 1, and the apparent cloud in the upper part of the field became fainter, although the change in the size of the mass within the eye could not be discerned.

The blood-clot surrounding the inferior temporal vein rapidly diminished in size, leaving a few small patches of pigment in the retina on either side of the vessel, and these finally disappeared altogether.

The next menses were again delayed, but fortunately with no further ill-effects to the eye, although for two days prior to their onset, marked congestion of the retinal veins was observable.

June 22nd.—Vision = $\frac{9}{8}$ pt.

July 6th.—Vision = $\frac{9}{8}$ pt. The mass in the lower part of the eye had distinctly shrunk in size and become white.

The treatment consisted mainly in perfect rest for five weeks until the next menstrual period had passed. Leeches were applied a second time four days after the first application. Potassium iodide, gr.v., was given for the greater part of the time, while calcium chloride was given at the commencement, and, later, at the time of the menstrual periods.

Subsequently hot hip baths were recommended before the onset of the periods, in order to stimulate the normal flow, and, if possible, to prevent vicarious bleeding.

Conclusion.—The patient was examined about a year later (July 18th, 1903) when L.V. = $\frac{9}{8}$, no Hm. The fundus was in every respect normal, no remains of the hæmorrhage at the disc being visible, nor any change in the vitreous pointing to previous trouble there.

A CASE OF CONGENITAL BILATERAL AND SYMMETRICAL DISLOCATION OF THE CRYSTALLINE LENSES.*

BY

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F. H., *æt.* 14 years, small and frail for the age. Father dead from consumption, mother alive and well; has one brother deaf but well-sighted, and one healthy and well-sighted sister. The boy was brought up at Saint —'s Home, Liverpool; he has been taught to read a little, but has received no instruction in handicraft, and has, as far as can be ascertained, never before been taken to have his eyes examined by a surgeon, with a result that he now ekes out a poor existence by sweeping an office. The occurrence of such examples of gross neglect of children in the care of pretentious ecclesiastical and philanthropic "homes" make a strong argument for the proper medical supervision of the children in all such institutions, in the manner which has been so well worked out by the old School Board for London and continued by the London County Council.

The youth was seen first on 4th October of this year; it was at once noticed that both lenses were dislocated. He presents no abnormalities other than those of the eyes; the teeth are excellent, both in quality and condition.

Each lens is displaced inwards and upwards in the direction of the root of the nose; their exposed edges are well rounded and slightly opaque, there is no trace of any suspensory ligament for fully one-half of the periphery of the lens, and from the position of the lens it may be judged that the ligament is absent for two-thirds of its normal extent. There is in each eye a clear, crescent-shaped pupillary area below and to the outer part; through this area the fundus can be seen; it is normal in each eye. The irides are abnormal in that they cannot be dilated by mydriatics; in ordinary daylight each pupil has a diameter of 5 mm., in the dark it measures only 5.5 mm.; after a prolonged use of the mydriatic it measures the same, 5.5 mm., but when a strong light is thrown upon it there is a contraction to its ordinary daylight size. Each iris is very tremulous, and the peculiarly heavy movement of the upper and inner quadrant rather suggests that the lens sways backward and forward behind the iris.

*Case shown 21st October, 1904, before the *Society for the Study of Disease in Children*.

The right eye fixes, and has vision at a distance of 3 inches of J. No. 6 with some difficulty. Retinoscopy through the clear crescentic portion of the pupil gives a refraction of + 9 D. ; with this glass the boy reads at once 6/18, and one letter of 6/12, with + 13 D. he read J. 4 at 8 inches, and on a second attempt some of J. 2. It seems probable that his visual acuity will improve with a regular use of the glasses.

The left eye diverges, and has no quantitative vision. Retinoscopy gives a refraction of + 9 D., but a glass does not aid vision. The eye is probably amblyopic from suppression of vision by disuse ; his habit of holding printed matter very close to the right eye completely precludes the possibility of the simultaneous use of the left eye.

Comments.—It has been shown by the researches of Mr. E. Treacher Collins that the lens in early foetal life has a size which, in relation to the rest of the globe, is greater than that which it attains at any other time ; it is so large that it is in close contact with the ciliary body. During this period its equator becomes adherent to the ciliary region, and as the globe grows at a greater rate than the lens, the links of connection between lens and ciliary region become drawn out to form the slender strands of the suspensory ligament. We must conceive that in the case of this boy, for some reason, these primitive adhesions did not form around the whole lens but only inwards and upwards ; the condition, then, is not a dislocation in the proper sense of the word, but a failure of union. The defect does not appear to be in the lens, for the epiblast from which the lens arises, in common with the scarf skin, hair, and teeth, is normal ; rather it would appear to be in the irido-ciliary region, for it has been noted that the iris of each eye was defective in that it could not be dilated : probably the ciliary muscles are absent or only developed in slight degree.

The treatment of these cases is rarely so easy or satisfactory as in this boy. He has a clear pupillary opening and can be treated as aphacic and given ordinary cataract glasses with excellent results. When the badly-placed lens obstructs the pupil it is usual to remove it by "needling" : the practice is not as simple as in the case of needling an ordinarily suspended lens ; the displaced lens is very intolerant of injury, and does not ripen with facility after its capsule has been apparently well opened up by the needling. I believe the difficulty arises from the lack of tension on the capsule of these lenses ; the equator of the lens is not pulled upon equally from all directions, so that a prick, or even a cut, does not cause the capsule to retract and expose the lens-matter. The condition can be illustrated by the different effects of pushing a needle into a piece of fine kid :

if the kid is loosely held in the fingers the prick leaves a hole not easily found; if the kid be tightly stretched upon a "drum" the prick stretches out into a wide hole. I am inclined to think that when operative treatment is indicated it would be much better to open the anterior chamber and boldly to remove the capsule of the lens by seizing it with Couper's capsule forceps, steadying the lens if necessary with a needle. The operation should entail no added risk.

INJURY TO THE EYE BY POTASSIUM PERMANGANATE.

BY

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Injuries to the eye by permanganate of potassium cannot be common accidents. How rare they really are may be gathered from the fact that in Dr. E. Praun's text-book, *Die Verletzungen des Auges* (1899) their occurrence is not even mentioned. An account of two cases of the kind, therefore, may be of some little interest.

Case No. 1.—The patient, a child of 6½ years, was admitted to the North-Eastern Hospital for Children, London, under Mr. Sydney Stephenson, on September 25th, 1904. The night before she was playing with another girl, who in a fit of temper threw some crystals of potassium permanganate into her right eye.

Upon examination, the eyelids were swollen and black, looking almost as if they had been charred. The cilia were destroyed towards the inner angle of the lids. The eyelids could not be opened by the child herself. The skin about the inner canthus was more affected than the other parts of the lids. Upon everting the lids, the palpebral conjunctiva was found to be intensely hyperæmic. A small abrasion was present in the lower and outer part. There were two sub-conjunctival hæmorrhages, the inner one being of considerable extent. The cornea was uninjured.

The eye was washed out with boric lotion; some drops of castor oil were placed in the conjunctival sac, and the parts covered with boric lint.

Two days after admission, the blackened area at the inner angle of the eyelids became sloughy in appearance. The lids were, however, less swollen, and the redness of the conjunctiva less marked. On the fifth day the swelling of the lids had subsided. On the seventh day all conjunctival redness had

gone, except as regards the two hæmorrhages in the ocular conjunctiva. The sloughy area at the inner canthus was much cleaner.

The patient was discharged on the tenth day, with a slight scab only along the edges of the lids at the inner canthus and a little unabsorbed blood under the ocular conjunctiva at the inner side.

At first some doubt was thrown on the fact of the injury having been caused by potassium permanganate, but the mother of the child brought some crystals of that substance with her to the Hospital, and thus allowed of her original statement being confirmed. The crystals were kept in a tea-pot on a shelf, and were used by the woman for toilet purposes. She stated that they had been taken from that receptacle by the angry child.

It may be added that when the child was seen as an out-patient on October 6th, 1904—that is, twelve days after the injury—there was a scab over the skin about the inner canthus of the right eye, and most of the cilia were absent from that neighbourhood. A trace of ecchymosis still remained in the ocular conjunctiva near the inner side of the cornea.

Case No. 2.—A boy, aged three years, found a packet of potassium permanganate crystals, and, while playing, spilt its contents. Some of the crystals fell into his left eye. Shortly after the accident he was brought to the Hospital, because his mother noticed that the eye was swelling. On examination, both lids of the left eye were found to be much swollen. Inside the lower eyelid were two crystals, and there were several blackish stains, the effects of other crystals. The eye was washed out and the greater part of the black staining removed, although with some difficulty. The same after-treatment was employed as in the first case. On the following day there was more swelling of the eyelids, accompanied by marked chemosis and conjunctivitis. Treatment was kept up for nine days, at the end of which time little redness of the conjunctiva remained. That there was scarcely any sloughing to be seen in this case was probably due to the fact that the child was treated at an earlier stage after the accident, thus enabling the exciting cause to be removed sooner.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—BACTERIOLOGY.

- (1) **Martin A.**—A new case of keratomycosis aspergillina. (Ein neuer Fall von Keratomycosis aspergillina.) *Archiv für Augenheilkunde*, August, 1904.
- (2) **Knapp, Arnold.**—The bacteriological diagnosis of the diphtheria bacillus, especially in conjunctivitis. *Trans. American Ophthal. Society*, Vol. X, Part II, 1904, p. 283.
- (3) **Szczybalski, Philipp.**—A case of ulceration of the cornea caused by infection with the bacillus pyocyaneus. (Ein Fall von Ulcus corneæ durch Infection mit Bacillus pyocyaneus.) *Archiv für Augenheilkunde*, Januar, 1905.

(1) **Martin** reports the following case of keratomycosis aspergillina. — A young woman developed, without known cause, an ulcer of one cornea. Lying upon the lower temporal quadrant of her left cornea, near the limbus, was an opaque, white, circular *plaque*, about 2 mm. in diameter, not much elevated above the surface of the cornea. A narrow isolated bunch of vessels ran into the spot from the neighbouring ocular conjunctiva, so that the appearance presented a remote resemblance to a corneal phlyctenule (for a similar case by B. Kayser, see THE OPHTHALMOSCOPE, Vol. II (1904), page 142). The *plaque*, when detached with the point of a needle, left a small dimple, as it were, in the substance of the cornea. Cure was complete in five days. Bacteriological investigations showed that the little mass consisted of a species of *Aspergillus fumigatus*, the inoculation of which into the corneæ of rabbits gave rise to the appearances of violent inflammation. Some colonies of xerosis bacilli were also present in cultures. S. S.

(2) **A. Knapp** describes what may eventually prove to be a most valuable means of differentiating between the Klebs-Löffler bacillus, the Hoffman bacillus, and the ubiquitous xerosis bacillus. The method is based upon the recent work of Dr. Hiss, of Columbia University. That observer employed a 1% solution of certain sugars—dextrose, mannite, maltose, lactose, saccharose, and dextrin—added to a medium of beef-serum (one part), distilled water (three parts), and a little litmus. It was found that certain organisms when cultivated in these media were associated with the production of acid and a coagulation of the fluid. As different sugars were affected by the various organisms,

a means of differentiation was furnished. Knapp has found that the Klebs-Löffler bacillus causes the dextrin medium to become red and to coagulate, while saccharose remains without change. The xerosis bacillus, on the other hand, produces fermentation and acid in saccharose, while not affecting dextrin. The Hoffman bacillus ("pseudo-diphtheria bacillus") affects none of the media containing sugar. Knapp quotes a case of so-called pseudo-membraneous conjunctivitis in a young child where the dextrin media showed the changes mentioned above as characteristic of Klebs-Löffler bacillus. A guinea-pig, inoculated from the culture, died in thirty hours, and showed at autopsy the lesions typical of diphtheritic infection.

(3) **Szczybalski** adds another to the growing list of cases of corneal ulcerations associated with the bacillus pyocyaneus. His patient developed a hypopyon-keratitis after some dust had blown into his eye whilst engaged in carrying straw. A large flat ulcer, of yellowish-grey colour, occupied almost the entire cornea of one eye, and was associated with a layer of pus in the anterior chamber about 3 mm. high. Vision was reduced to the counting of fingers. The ulceration healed after cauterisation. Bacteriologically, cultures were obtained on blood-serum of a mobile bacillus, negative to Gram. Further investigation showed that the organism was *B. pyocyaneus*. Inoculation of the cornea of a rabbit gave rise to a rapidly spreading purulent ulcer, together with a ring abscess (Fuchs). Subcutaneous injection into the soft parts of a white mouse produced a lethal issue in twenty-four hours.

S. S.

II.—PARINAUD'S CONJUNCTIVITIS.

- (1) **Goldzieher, Wilhelm.**—Upon the so-called Parinaud's disease. (Ueber die sogenannte Parinaud'sche Krankheit.) *Bericht der Pester Medizinisch-Chirurg. Presse*, Nr. 35, 1904, and *Wochens. f. Therapie u. Hygiene des Auges*, 29 September, 1904.
- (2) **Verhoeff, F. H., and Derby, G. S.**—Parinaud's conjunctivitis. *Archives of Ophthalmology*, July, 1904.
- (3) **Posey, Wm. Campbell.**—A case of Parinaud's conjunctivitis. *College of Physicians of Philadelphia*, 18th October, 1904.
- (4) **Thomson, A. G.**—A case of Parinaud's conjunctivitis. *College of Physicians of Philadelphia*, 18th October, 1904.

(5) **Goldzieher, W. — Ueber Lymphom—Conjunctivitis.**
Centralbl. f. prak. Augenheilkunde, Januar, 1905.

(1) In March, 1904, **Goldzieher** showed before the *Budapecster Königl. Aerzterverein* a cured case of Parinaud's disease, as well as some microscopical sections of the affected conjunctiva.

Goldzieher was, it appears, the first to describe what is now very generally known as "Parinaud's" or "septic" conjunctivitis. The patient was a girl, 10 years of age, who developed a large lymphomata on the right side of the neck, followed a week later by swelling of the lids of the corresponding eye, and the development of large follicles on the palpebral conjunctiva (*Centralbl. f. prak. Augenheilk.*, 1882). Three months later, the swollen glands were operated on, and later still other glands, which had in the meanwhile become involved, were treated surgically. Iron and arsenic were administered internally, and the eye was treated with iodoform, pulverised and in ointment form. The affected conjunctiva eventually became normal.

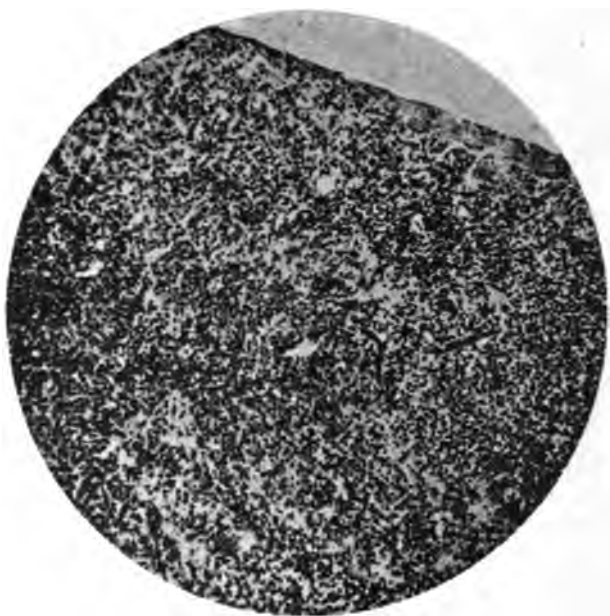
According to Goldzieher, the following are the clinical characteristics of this form of disease. Small knob-shaped formations, generally accompanied by symptoms of inflammation, appear upon the conjunctiva, and large lymphomata develop in the neck. Chemosis may exist. In most cases the eyelids are markedly swollen. The conjunctival granulations may become so large as to resemble button-like excrescences or cockscomb-like growths. Smaller follicles generally lie between the larger out-growths, and bear a striking resemblance to fresh trachoma follicles. The affected conjunctiva is very vascular, swollen, and bleeds readily. The disease is nearly always unilateral, and on the side corresponding to the lymphatic enlargements. The differential diagnosis from trachoma depends upon these points: simultaneous swelling of the lymph nodes in the neck, size of the conjunctival out-growths, unilaterality of the affection, and absence of infectivity. The course of the disease is usually characteristic, since it is benignant, and in that respect also differs from trachoma. Moreover, there are important histological differences between the two diseases. Pathological investigations, indeed, prove conclusively that one has to do neither with lupus, syphilis, nor with tubercle. With regard to treatment, Goldzieher recommends locally weak silver nitrate solutions, iodoform, and in severe cases with large granulations, mechanical removal of the latter. The etiology is as yet determined. No specific cause has so far been found either in the affected

*For abstracts dealing with this form of conjunctivitis see *THE OPHTHALMOSCOPE*, Vol. II (1904), pp. 279 and 480.—EDITORS.

conjunctiva or in the enlarged lymph nodes. Everybody, however, agrees that the process is not of a tuberculous nature. Three cases investigated pathologically by Goldzieher showed great hyperplasia of the conjunctival lymph-vessel system, which was surrounded by hyperplastic lymphoid tissue and large lymph follicles. The other findings included overgrowth of the epithelium, and the formation of epithelial columns dipping deeply into the subjacent tissue. Giant cells were found here and there, a thing never observed by Goldzieher in trachoma. S. S.

(2) In the course of a somewhat elaborate communication, which occupies twenty-three pages of the *Archives*, **Verhoeff** and **Derby** describe a case of Parinaud's conjunctivitis and analyse the instances previously reported of that singular disease. The facts of their own case were as follows: a female stenographer, aged 30 years, had suffered for ten days before she was seen by the authors from inflammation of one eye, associated with a painless swelling in front of the corresponding ear. No history of exposure to infection from human beings or from the lower animals. The condition was characteristic of Parinaud's conjunctivitis at an early stage. Treatment included hot fomentations, argyrol (25%), sublimate lotion, and excision of granulations; the swollen glands were treated with ichthyol ointment; eight-drop doses were administered three times a day of the liquor potassii arsenitis. The affected glands did not break down, and ulcers of the conjunctiva were not observed. The process began to improve after three weeks' treatment. The patient's health did not suffer. Three months after the woman first came under observation the eye was practically well, but there was still slight ptosis and some induration in front of the ear.

Examination of the conjunctival secretion for micro-organisms yielded merely xerosis bacillus and, now and then, the staphylococcus albus. Smears and cultures (aerobic and anaerobic) from the palpebral outgrowths were always negative. Sections of tissue fixed and stained in various ways, were searched without success for bacteria, fungi, and protozoa. The inoculation of diseased tissue into the eye of a rabbit and the groin of a guinea-pig led to no positive result. The histological examination of pieces of excised tissues, after fixation in alcohol, formol (10%), or Zenker's fluid, gave these findings. The polypoid growths (see figure) were made up of newly organised tissue, densely infiltrated with cells, lymphocytes, epithelioid cells, a few plasma cells, but practically no pus cells. Many of the epithelioid cells contained necrotic nuclei and other cellular detritus, and they were frequently



Polypoid vegetation ($\times 129$) showing diffuse character of cellular infiltration.

full of vacuoles. Most of the infiltrating cells showed marked degenerative changes, varying from simple karyolysis and fragmentation of nuclei to more or less complete disintegration of the cell bodies. The specific stains for connective tissue showed numerous capillaries and delicate fibrillæ among the cells. For the most part, the deeper tissues were in a state of chronic inflammatory reaction. The covering epithelium was thinned, often mucoid, and manifested the usual signs of chronic inflammation. Interpapillary downgrowths were absent. The authors sum up the microscopic appearances in the following words: "The lesion consists essentially of marked cell necrosis in the subconjunctival tissue with extensive infiltration of the latter with lymphoid and phagocytic epithelioid cells. This is accompanied by chronic inflammatory reaction of the deeper tissue, leading to the process of organization and the production of new fibrous tissue."

The following are Verhœff and Derby's conclusions: (1) the primary lesion in Parinaud's conjunctivitis is superficial, being confined almost exclusively to the sub-conjunctival tissue, and consists essentially in cell necrosis, followed by proliferation of connective tissue; (2) the agent which produces the local lesion is non-pyogenic, suppuration, if it does occur, probably

being due to secondary infection ; (3) the infection is in all probability not due to any of the known micro-organisms ; (4) the theory of animal origin is grounded upon insufficient evidence ; and (5) the most efficient treatment consists in the early and repeated excision of the polypoid vegetations.

(3) **Posey** reports a case of Parinaud's conjunctivitis in the right eye of an army surgeon. There was marked swelling of the lids and thickening of the conjunctiva with large granulations hanging by pedicles from the fornix of both lids. Lying between these vegetations were erosions and smaller yellowish granulations. About a week after the eye symptoms manifested themselves, the preauricular and then the parotid and submaxillary and retromaxillary glands of the same side became indurated, and pus was liberated from them by incision. The general condition of the patient was one of depression and slight fever. At a later stage a definite diagnosis of Malta fever was made. The ocular condition lasted for months.

(4) **Thomson's** case occurred in a coloured child, three years of age. Three weeks before coming under notice, a swelling developed of the posterior cervical glands, which rapidly extended to the submaxillary, preauricular, and to the glands overlying the parotid. The eyelids became swollen, and in a few days a thick, yellowish discharge from the conjunctiva was noticed. Upon admission, both eyes were found to be affected ; cornea was healthy ; a limited portion of the ocular conjunctiva was chemotic. Bacterioscopic examination showed no evidence of tubercle. No history of trachoma. The child's father worked in a fertilizing factory.

(5) **Goldzieher** goes over much the same ground in this article as in the one abstracted above (*loco citato*). Under the names "lymphadenitis conjunctivæ" and "lymphoma of the conjunctiva," it appears that Goldzieher has published five cases in the years 1882, 1893, and 1902 respectively.

III.—POST-OPERATIVE GLAUCOMA.

Wicherkiewicz.—Post-operative glaucoma (following cataract operations). [Du Glaucome post-opératoire (après l'opération de la cataract).] *Annales d'oculistique*, T. CXXXII, p. 5, juillet, 1904.

Wicherkiewicz distinguishes between glaucoma occurring at an interval after cataract extraction and that which supervenes more or less immediately after the operation or during the post-operative treatment, and excludes entirely those

cases in which increased tension develops in aphakic eyes under the influence of some condition having no connection with the operation, *e.g.*, iritis with exudation. After referring to the theories which have been put forward by Rheindorf, Priestley Smith, Czermak, Uribe Troncoso, and Terson, he states his opinion that no single explanation will account for all cases of glaucoma either primary or post-operative, but that the greater number of the latter are due to interference with the excretory paths, usually secondary to the operation, while others depend on an excessive or vicious secretion resulting from a local or general affection, and may be caused in the following ways:—in aphakic eyes, if the capsule has not been removed it stretches and approaches the ciliary processes; if much *débris* is present this may produce a membrane thick enough to interrupt the intra-ocular circulation and to cause glaucoma. The reason why this does not happen oftener is that such a membrane is usually pierced by holes or contracted by cicatrisation. After dissection of a capsular membrane the escape of aqueous may allow the vitreous to advance and press the thickened membrane against the iris so as to cause the latter to block the excretory paths and to set up glaucoma. Incarceration of the ligament of Zinn can cause glaucoma which may be cured by cutting the membrane. Cortical remains can cause glaucoma by (a) irritating the iris and ciliary body, and so causing increased secretion, (b) blocking the canal of Schlemm, (c) swelling between the layers of the capsule, so as to press the periphery of the iris against the cornea. Prolapse of the vitreous may press the iris against the cornea and block the corneo-iridic angle causing the aqueous to get diffused between the retina and vitreous. Blood which escapes into the eye during the operation from the cut iris or conjunctiva may become organised and block the filtration angle, while intra-ocular hæmorrhage coming on after the wound has cicatrised may press the vitreous and iris forward against the cornea and indirectly cause obstruction of the filtration angle. Cases have been reported in which the filtration angle has been blocked by ingrowth of corneal epithelium through the wound or by infiltration of its trabecular system with pigmented cells. Finally, he states that taking into account the different clinical causes which have been suggested and the researches made with the object of explaining glaucoma in general he comes to the conclusion that the greater number of post-operative glaucomas are secondary, owe their existence to obstruction of the corneo-iridic angle and excretory paths, and are a result of either of a faulty operation or of inflammation occurring in an unhealthy patient following iritis or irido-cyclitis, or the retraction of a

pupillary membrane towards the periphery after dissection, while primary glaucoma developing after operation is rare and depends on senile changes in the ciliary processes or the blood vessels, or perhaps on smallness of the cornea. To avoid the occurrence of the condition the following precautions are recommended: in operating the region of the excretory passages should be avoided, as large a piece of capsule as possible should be removed, and no cortical *débris* should be left behind. If an iridectomy is done it should be peripheral but not necessarily broad. The incision should be large enough to avoid bruising of its edges or scraping of cortex off the lens nucleus during delivery. During the after-treatment mydriatics should be used with caution. If the anterior chamber is not re-established in due course, the tension should be tested, and if it is raised, myotics should be instilled. Special care should be taken in cases in which there are signs of a tendency to glaucoma. The article concludes with histories of cases illustrating some of the points mentioned.

R. J. COULTER.

IV.—INTRA-OCULAR IRRIGATION IN THE OPERATION FOR CATARACT.

Lagrange, Félix, and Aubaret.—Intra-ocular irrigation in the operation for cataract. (*Du lavage intra-oculaire dans l'opération de la cataracte.*) *Archives d'ophtalmologie*, février, 1905.

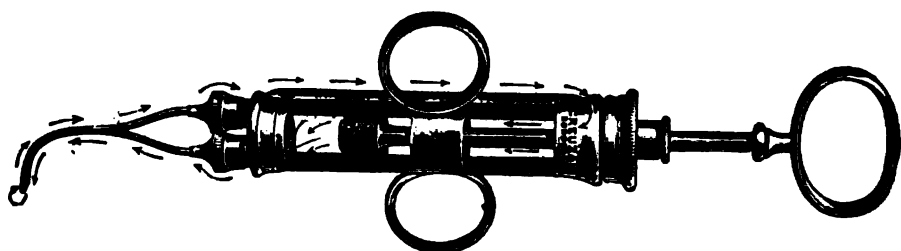
Intra-ocular irrigation, as an integral part of the operation for cataract, has not been adopted by a majority of ophthalmic surgeons. **Lagrange** and **Aubaret** believe that the procedure is most useful in certain cases, provided that it is carried out with an instrument constructed upon the principle of simultaneous flow and return, and, further, that the fluid injected approximates to the composition of the normal aqueous humour. They state their conviction that irrigation with antiseptic liquids, especially with the salts of mercury, has retarded, by ten years, at least, the general adoption of the method. The syringe employed by the authors is shown in the illustration.*

By a single stroke of the piston, fluid is thrown into the anterior chamber, and at the same time withdrawn from that cavity. The fluid, situated below the piston when the syringe is charged, is thrown into the eye through the lower channel. It is at once

* Syringe made by Creuzen & Soulard, 47, Cours de l'Intendance, Bordeaux. Price 50 francs.

aspirated by the upper channel, and conveyed by the lateral tubule (shown in the cut) to the upper part of the syringe, where it collects above the piston. The liquid employed by Lagrange and Aubaret approximates as closely as possible to the recent analyses of the aqueous humour made by Lohmeyer. It is composed as follows:—water, 1,000; sodium chloride, 6.890; calcium chloride, 0.113; and potassium sulphate, 0.221. The liquid is stored in flasks containing 100 grammes, sterilised in the autoclave, and warmed to a temperature of 37° C. in a water-bath immediately before it is used.

In the authors' view, irrigation is by no means necessary in every extraction. In addition to sweeping away *débris* capable of ultimate absorption, it loosens such fragments from the capsular sac, and frequently also rids the eye of bits of the anterior



capsule. Because the pupil looks black after extraction, it by no means follows that the lens has been wholly removed. In this connection the authors, aptly enough, quote Chibret's words:—"In trusting to the clearness of the pupil," wrote Chibret, "we reason almost like a man who passes a house, and affirms that it is not inhabited because he can see nobody at the window." Under the influence of the circulating liquid, the two leaves of the capsule, always adherent peripherally, become separated, and thus allow imprisoned fragments of gelatinous cortex to escape from the eye. The authors believe that irrigation is indispensable in unripe or swollen cataract, in cataract associated with low tension, and in certain soft cataracts where, despite complete opacity of the lens, dehiscence of the central masses is imperfectly performed. It is also necessary in cases of traumatic cataract. The authors consider that the various kinds of cataract enumerated above amount to 15 per cent. of all cases. In a second group, irrigation is useful but not absolutely necessary. This includes semi-soft cataract difficult of evacuation and those accompanied by hæmorrhage into the anterior chamber. Other cases are "milky" cataract in children and the cataract surgically induced in the operative treatment of high myopia.

Lagrange and Aubaret have never lost a drop of vitreous in the several hundred irrigations they have performed, neither have they seen the least opacity of the cornea follow the injections. They strongly insist upon the necessity of a docile patient. Lastly, it may be noted that, as a preliminary to removal of the lens, they take away a large piece of capsule by means of forceps.

Lagrange and Aubaret conclude a temperate and well-reasoned article with these words:—(1) that intra-ocular lavage, carried out with a syringe capable of aspirating and injecting at the same moment and with artificial aqueous humour has no drawbacks either from the point of view of the nutrition of the cornea or from that of loss of the vitreous humour—in other words, that it constitutes an altogether innocuous operation, which should be adopted by every oculist; and (2) that there are a group of cataracts (juvenile, soft, choroidal, traumatic, intumescent, etc.) which benefit from intra-ocular irrigation, and that in such cases the procedure should take a large part in the operative treatment.

S. S.

V.—SYPHILITIC AFFECTIONS OF THE EYE.

- (1) Dubrot.—Syphilitic polyneuritis of the eye. (*Polynévrite syphilitique de l'appareil oculaire.*) *Soc. belge dermat. et de syph.*, 1903, No. 3, p. 85.
- (1A) Cruchaudeau, G. E.—Bilateral internal ophthalmoplegia in a patient the subject of hereditary syphilis. (*Ophtalmoplrique intrinsèque bilaterale chez un hérédito-syphilitique.*) *La Clinique Ophtalmologique*, 25 février, 1903.
- (2) Sendral, E.—Thoughts consecutive to a case of late hereditary syphilis of the eye. (*Réflexions consecutives à une observation d'hérédo-syphilis oculaire tardive.*) *Recueil d'ophtalmologie*, XXV (1903), p. 257.
- (3) Marburg, O.—Juvenile and infantile tabes. (*Infantile und juvenile Tabes.*) *Wiener Klin. Woch.*, 1903, 47, and *Woch. f. Ther. u. Hygiene des Auges*, Januar 8, 1904.
- (3A) Snell, Simeon.—The after-history of a case of extra-genital syphilis; chancre at the inner canthus; interstitial keratitis in the patient and in one of her children. *Lancet*, 19th December, 1903.
- (4) Clarke, J. Michell.—On the relation of the Argyll Robertson phenomenon to syphilis. *British Medical Journal*, 26th December, 1903.
- (4A) Fabre, P.—On tabetic atrophy of the optic nerve—the preatrophic period and its treatment. (*De l'atrophie*

- tabétique du nerf optique—la période préatrophique et son traitement.) *Recueil d'ophtalmologie*, 1903, p. 567.
- (5) Rollet, Etienne.—Forms of keratitis in hereditary syphilis and their treatment. (Les k ratites des h r do-syphilitiques et leur traitement.) *Revue g n rale d'ophtalmologie*, janvier, 1904.
- (5A) Motais.—On the gravity of syphilis with ocular complications. (De la gravit  de la syphilis   complications oculaires.) *L'Ophthalmologie Provinciale*, avril, 1904.
- (5B) Marlow, F. W.—Primary chancre of conjunctiva followed ten years later by interstitial keratitis of the same eye. *Ophthalmic Record*, March, 1904.
- (5C) Snydacker, E. F.—A case of persistent  dema of the eyelid due to syphilis. *Archives of Ophthalmology*, March, 1904.
- (6) Kaufmann, Rudolph.—On hereditary infantile tabes dorsalis. (Ueber heredit re infantile Tabes.) *Wiener Klinische Rundschau*, 28 August, 1904.
- (6A) Lagrange and Aubaret.—Congenital syphilis of the eye: gummatous iritis—glaucomatous accidents—cure. (Syphilis cong nitale de l' il: iritis gommeuse—accidents glaucomateux—gu rison.) *Archives d'ophtalmologie*, ao t, 1904.
- (7) Pernet, George.—A case of secondary syphilis with severe eye complications. (Ein Fall von secund rer Syphilis mit schwerer Augenerkrankung.) *Berliner klin. Wochenschr.*, Nr. 37, 1904.
- (8) Suker, George F.—The molar teeth and the patellar reflex in hereditary syphilitic interstitial keratitis. *Medicine*, September, 1904.
- (9) Villard, H.—Alterations of the cornea in acquired syphilis. (Les alt rations de la corn e dans la syphilis acquise.) *Annales d'oculistique*, octobre, 1904.
- (10) Verhaege, D.—Interstitial keratitis due to acquired syphilis. (La k ratite interstitielle d'origine syphilitique acquise.) *Gazette des H pitaux*, 15 octobre, 1904.
- (11) Paton, Leslie.—The commoner local eye lesions of syphilis. *The Polyclinic*, October, 1904.
- (12) Collins, E. Treacher.—Primary chancre of the conjunctiva and interstitial keratitis. *Royal Lond. Ophth. Hosp. Reports*, Vol. XVI, Pt. I.

- (13) **Trantas.**—**Malignant keratitis parenchymatosa and pregnancy; induced abortion; cure.** (*Kératite parenchymateuse maligne et grossesse; avortement provoqué; guérison.*) *Archives d'Ophthalmologie*, décembre, 1904.

(1) Dubrot observed in a woman, about three months after the initial sclerosis, paralysis of all the muscles of the eye, internal and external, with the single exception of the superior oblique. There was, moreover, neuro-retinitis of the same eye. Cure was obtained by ten injections of calomel, a week's interval elapsing between successive injections. The author believes that the ocular symptoms were due to a basal pachymeningitis. It is to be noted that the calomel injections did not prevent a gumma of the tonsil from appearing during the course of treatment.

H. COPPEZ.

(1A) In a boy of 10 years who, from his cornea, fundi, teeth, and maternal history, is recognised as an hereditary syphilitic, **Cruchaudeau** diagnosed ophthalmoplegia interna. Twenty-four injections of benzoate of mercury in watery solution (one thrice weekly) resulted in ability to read the finest print with +1.5D, and return of pupillary re-action; although the right pupil remained larger than the left. (By retinoscopy there had been 2D. of myopic astigmatism in each eye, so that since +1.5D. (*sic*!) was prescribed for near work, it seems that the cure cannot have been considered complete at the time of writing.—Trans.)

ERNEST THOMSON.

(2) A girl, the subject of hereditary syphilis, was affected with bilateral interstitial keratitis at the age of seven years, which was apparently cured by potassium iodide, atropine, and ocular douches. Five years later, the keratitis recurred, and was complicated with changes in the uveal tract and gummatous periostitis of one tibia. Various methods of mercurial medication were tried, but without success. However, the symptoms yielded entirely to intra-muscular injections of a 1 per cent. solution of mercury cyanide. As causes of interstitial keratitis, **Sendral** includes syphilis, tuberculosis, and leprosy. With regard to relapses, the author makes the generalisation that every specific interstitial affection of the cornea, which entails as a lasting result opalescence or sclerosis, is liable to be followed by relapse. Such relapses are especially to be apprehended when the treatment of the primary attack has been by potassium iodide. According to Sendral, mercury is indispensable in interstitial keratitis. He does not deny that cases recover under mydriatics and iodides, but believes that traces of the

disease often remain after those means. He gives the preference to inunctions, or, if a rapid result is desired, to injections of mercury. S. S.

(3) **Marburg** first gives the history of a boy, ten years of age, who suffered from commencing optic atrophy and rigidity of the pupils, with a suggestion of the Westphal and Romberg phenomena. The patient had contracted syphilis whilst being nursed. Marburg next adduces thirty-four cases of infantile and juvenile syphilis which he has collected from literature, and examines the figures thereby obtained with reference to the appearance and the frequency of the several symptoms of the disease. Amongst the cases analysed there were nineteen female and fifteen male patients. In twenty-two cases there was hereditary, and in four acquired, syphilis, a circumstance significant as regards etiology. A neuropathic disposition is also concerned in the production of the tabes. In twenty-four of the cases there were disturbances of sensibility. The participation of the optic nerve was a frequent and early occurrence, a remark that applied also to the bladder troubles in youthful patients. Severe ataxy was rare in juvenile tabes. It was found that the optic atrophy exerted a certain influence upon the course and character of the tabes. The prognosis as regards life is good, while, from other points of view, it has the same significance as in adults.

(3A) In 1882 **Snell** treated a young woman for a chancre of the inner canthus of one eye. The disease had been contracted from a baby suffering from congenital syphilis. The patient married nine months later. She then had two miscarriages, seven still-born children, and four children born alive. There were five still-born children before one was born alive and at term. The baby, the primary source of the infection, was brought to Snell when seven years of age affected with interstitial keratitis, deafness, and other signs of inherited syphilis. One of the children of the original patient also came under treatment for interstitial keratitis. Finally, the original patient herself, twenty-one years after the primary lesion, developed interstitial keratitis in one eye.

(4) After pointing out that the Argyll Robertson sign is now usually believed to occur in tabes dorsalis, general paralysis, and syphilis (acquired and congenital), and only exceptionally in other disorders, **Clarke** gives the following conclusions :—
“That a previous syphilitic affection is not sufficient without some further change to lead to the presence of the Argyll Robertson phenomenon, and in thirty-seven cases of cerebral and spinal syphilis, where the mischief was confined to the ordinary visceral lesions of that disease, that is, gummata,

gummatous meningitis, syphilitic endarteritis, the sign was not typically present. That in similar cases where it may be present, and in other cases with a history of past syphilis in which it occurs as an isolated sign of disease, it is evidence of a further degenerative process at work within the nervous system. That this degenerative process is to be regarded in the large majority of cases as a parasymphilitic one, although in a certain proportion proof of this is wanting, and there is possibly some other cause at present obscure. That this degeneration may remain stationary at an early stage without further development for long periods."

(4A) It is clearly important to recognise the latent phase of tabetic optic atrophy, since treatment may then be of great service, whereas at a later stage it may prove useless. According to **Fabre**, careful study of the case may allow of our diagnosing the disease long before the appearance of definite ophthalmoscopic changes. In cases of the kind, the manifestations of secondary syphilis have always been remarkably mild, although such ocular lesions as iritis, keratitis, and so forth are frequent. In one-third of the cases there has been muscular paralysis, affecting by preference the III. or VI nerve. One of the first symptoms is an accommodative asthenopia. Disturbances in the light-sense are frequent initial symptoms. Partial colour-blindness may be an early sign, and so may erythroptia. Periorbital neuralgia or, anæsthetic zones in the region of distribution of the V pair, are other early signs. Slight palpebral narrowing, epiphora, myosis, Argyll Robertson pupil, hippus, clonic spasm of the ocular muscles, and inequality of the pupils may also be present. There are no appreciable ophthalmoscopic changes in the optic disc in the early stages. The first sign is hyperæmia of the papilla, followed by a bluish tinge, *i.e.*, an incipient atrophy. At this stage, in order to make a diagnosis, the signs enumerated above must be sought with care and be confirmed by an examination of the cerebro-spinal fluid. Diagnosis in the second stage is facilitated by the ocular manifestations in the shape of contraction of the visual field, hemianopsia, scotomata, dyschromatopsia, and alterations in the sensibility of the eyeball. Then, moreover, the aspect of the optic disc and the general symptoms allow of no doubt. What is the treatment of these preatrophic forms of tabes? Without doubt, instant recourse should be had to mercurials, by the administration of which certain symptoms may be modified, or the course of the disease may be retarded or actually stopped. The inunction of two grammes of mercurial ointment daily is recommended by Fabre. The treatment must be kept up for two years.

S. S.

(5) The concluding sentence of **Rollet's** interesting communication may be quoted as the thesis which he defends. "I wished to show that the forms of keratitis described as due to hereditary syphilis can be quickly enough cured by local treatment, thus avoiding the necessity of treating with mercury and iodide children or adolescents afflicted with this disease. This latter treatment I think I have proved to be quite useless in most cases." The author first refers to the hold which Hutchinson's ideas have obtained. So great is this that older terms, like scrofulous or cachectic keratitis, have quite disappeared, leaving anatomical descriptions only, such as parenchymatous or interstitial keratitis, etc. He next refers to the differences of opinion expressed by writers as to the value to be attached to vigorous mercury or iodide treatment, some putting great faith in it, others none at all. Those who believe in it, Rollet points out, always warn their patients that treatment must be prolonged. And yet, is it not the rule that mercurials act rapidly in syphilis? There are, he thinks, not one, but several kinds of keratitis in those who come of syphilitic stock. "In my opinion, the authors I have cited, having treated by the same means forms of keratitis of different origin, necessarily obtained different results." Rollet classifies the cases as follows: (1) In the descendant of a cured syphilitic the corneal affection is an ordinary non-specific one, and belongs to the same category as interstitial keratitis in a patient descended from alcoholic or tuberculous but non-syphilitic parents: (2) keratitis in "dystrophic" hereditary syphilis, associated with dental, nasal, and osseous changes. The subject of this keratitis has never been "contagious." He is not immune, and can contract primary syphilis: (3) Keratitis in virulent hereditary syphilis, very rare, because in 70-80 per cent. of cases the infant dies. When keratitis occurs it sometimes does so earlier than in class 2. The infant was contagious at birth, and although he could transmit the disease, he had never had and never would have a chancre. It is thus easy to understand that specific treatment may give brilliant results in class 3 and none at all in classes 1 and 2, and since class 3 is quite small, specific treatment is rarely indicated.

The remainder of the article is taken up with an account of the value of subconjunctival injections of methylene blue and biniodide oil. The latter causes much less irritation than the other salts of mercury. **ERNEST THOMSON.**

(5A) **Motais** has followed the after-history of 82 patients who suffered from syphilitic disease of the eyes for periods varying from 2 to 19 years. He finds that in 43 cases (*i.e.* 52%) grave tertiary lesions occurred. After iritis, osseous lesions, and after

chorio-retinitis, cerebro-spinal lesions were the commonest, while the disease following affections of the optic nerve almost invariably attacked the nervous centres. These statistics, taken in conjunction with those of Trousseau, who found tertiary disease in 32 out of 40 patients who had suffered from syphilitic iritis, lead Motais to conclude that the prognosis of syphilis with ocular complications is very grave.

R. J. COULTER.

(5B) A woman, aged 54 years, engaged in looking after an infant affected with inherited syphilis, consulted **Marlow** on account of a chancre in the lower retro-tarsal fold of the conjunctiva of the right eye. Ten years afterwards, she presented herself with interstitial keratitis of the same eye. The scar of the chancre was then plainly visible in the conjunctiva.

(5C) A mulatto, 33 years of age, when seen by **Snydacker**, had suffered for four months from a painless œdema of the left upper eyelid. Conjunctiva not involved. Tarsal plate not thickened. History of syphilis (imperfectly treated) seven years previously. Preauricular gland enlarged. The œdema disappeared after three weeks' treatment with mercurial inunctions and potassium iodide. The author believes his case to be analogous to that described recently by Neese (*see THE OPHTHALMOSCOPE*, Vol. I, p. 232). His view is that the œdema resulted from gummata in the subcutaneous tissue, although he admits that a gummatous tarsitis (Magawly), at an early stage, may have been the cause of the mischief.

(6) **Kaufmann** records the following case.—A boy, aged 10 years, the son of a father himself suffering from locomotor ataxia, presented : Hutchinson's teeth, thickening of the radial arteries, nocturnal incontinence of the urine since his sixth, and gastric crises, since his ninth year, pupils equal and of normal size not responding to light and but slightly contracting with accommodation, left disc somewhat pale, complete absence of the knee-jerk. Although it is impossible to exclude chronic syphilitic meningitis with certainty, yet the diagnosis of infantile locomotor ataxia in this child seems well founded. If one compares all published cases of this disease—they are only eleven in number—with the same affection in adults, three distinguishing facts become prominent :—(1) in the infantile cases ataxia is but little pronounced ; (2) the pupils frequently show a sluggish reaction during accommodation together with the absence of the light reflex ; (3) the same disease is very often found co-existing in one of the parents. If one considers the rare occurrence of these infantile cases, it must be confessed, that we know only some important predisposing factors, but not the whole truth of the causation of locomotor ataxia. C. MARKUS.

(6A) **Lagrange** and **Aubaret** publish details of a case in a young woman, (who presented no stigmata of congenital syphilis) of anterior uveitis, gummata of the iris, and increased tension. The evidence of hereditary syphilis is slender, since it was based almost entirely upon the good influence exerted upon the eye disease by so-called specific treatment. H. de V.

(7) In a woman, aged 28 years, suffering from secondary syphilis, **Pernet** observed central retinitis, hypopyon, and effusion into the vitreous humour. The energetic and prolonged use of mercury by the mouth, and also by intramuscular injection, led to considerable improvement in sight. J. F. S.

(8) "The first permanent molars," writes **Suker**, "gives as distinctive evidence of inherited syphilis as any of the other teeth." Indeed, if any of the teeth show the effects of an inherited taint, the molars never escape. The fact that they appear earlier than the incisors or bicuspidis lends material weight to the importance of their characteristic markings. With regard to the latter, Suker's account does not differ materially from that given by A. Darier, of Paris, who appears to have been one of the first to describe the dental changes (*see THE OPHTHALMOSCOPE*, January, 1904, for the original article). Suker next passes on to discuss the condition of the patellar reflex in cases of interstitial keratitis. Wood and Lang several years ago (*Royal London Ophthalmic Hospital Reports*, 1888) found that in a considerable percentage of their patients the knee-jerks were sub-normal or actually absent. On the other hand, the more recent investigations of N. B. Harman (*Ophthalmic Review*, 1903) have failed to confirm those results. Suker's experiences, which cover a series of 20 cases, coincide in every particular with those of Harman. It is suggested that the discrepancy between the earlier and the later observations may be explained, at all events in part, by a difference in the way of taking the reflex.

(9) Three kinds of keratitis are recognised by **Villard** as liable to occur in acquired syphilis: (1) interstitial keratitis; (2) true punctate keratitis; and (3) gummatous keratitis.

(1) *Interstitial keratitis*.—This rare complication of the acquired disorder may be diffuse or localised.

The diffuse form is a tertiary manifestation, seen most often in patients between the ages of 20 and 50 years, who usually enjoy good health. Its clinical characters include unilaterality, slow opacification of the cornea, slight vascularity, moderate subjective symptoms, and a speedy return to the normal under mercurial treatment. A complicating iritis may or may not be present. Relapses

are exceptional. Local treatment includes hot, moist compresses, atropine, yellow ointment, massage, and in grave cases, subconjunctival injection of sublimate or mercury cyanide. General treatment comprises mercury administered not by the stomach but by inunction or by injection—intra-venous or intra-muscular. Potassium iodide should be given in rapidly ascending doses. The author describes a case in a woman of 55 years, cured in two months by specific remedies.

The circumscribed form of interstitial keratitis (of which Villard gives a case in a woman of 30 years) is rarer than the type described above. It is an affection of adult life, and attacks woman more often than men. One eye is involved, and the parenchymatous infiltration remains limited to the part of the cornea primarily affected. There is nearly always violent reaction and pain. Irido-cyclitis is an almost constant complication, an association that sets a particular stamp upon this form of interstitial keratitis. Since the ailment is less definitely under the influence of treatment than is diffuse keratitis, the prognosis is not so good as that of the last-named affection.

(2) *True punctate keratitis*.—This affection (described by Mauthner in 1872) is characterised by the appearance in the deeper layers of the cornea of a number of greyish points, not exceeding in size the head of a pin. They appear and disappear with great rapidity. Subjective symptoms are not pronounced, and may, indeed, be almost absent. Irido-cyclitis is a rare complication. The deposits may persist for long, and after they have disappeared, leave indelible interstitial leucomata. Villard describes a case in a woman, aged 25 years, beginning two years after a vulvar chancre, and affecting one eye alone.

(3) *Gummatous keratitis*.—Villard reserves his opinion as to the existence of this form of disease, although instances of corneal gummata have been described by Magni (1863) Galezowski (1878), Denarié (1882 and 1883), Lang (1886), and Peters (1898). The gummatous deposits may be simulated by interstitial *plaques* or by abscess of the cornea.

A bibliography, containing forty-two entries, is appended to Villard's interesting communication. S. S.

(10) Although Velpeau (*Maladies des Yeux*, 1840) refers to the action of syphilis in producing keratitis, Verhaeghe believes that Follin (*Pathologie Externe*, 1861, p. 708) was the first writer to point out that the cornea might suffer in acquired syphilis. It is certain, however, that in 1873, Pulcheria Jakowlewa (*Zürich Thesis*) published fifty-one cases of inter-

stitial keratitis, of which two were clearly the outcome of acquired syphilis. In the same year Fournier (*Leçons sur la syphilis chez la femme*) cited cases where the eye disease was consequent on acquired disorder. Since then some eighty examples of the connection have been published. Summing up the figures given by Verhaeghe, we find 25 cases of interstitial keratitis, among a total number of 978, due to acquired syphilis. Actually, Verhaeghe thinks that from 2 % to 3 % of the cases of keratitis are due to acquired syphilis. Does this form of keratitis present any characteristic features or pursue any special course? The author endeavours to answer these questions by a close study of 27 cases, drawn, for the most part, from French sources. The particular points taken up were the following: (a) *Period of incidence*.—36 % of the cases occurred in the second year after infection. (b) *Nature of the corneal opacity*.—In 64 % of the cases the opacity was more limited than in cases due to inherited syphilis. (c) *Complications*.—Among the 27 observations, 9 were and 9 were not associated with iritis, while in 9 the point was not specifically mentioned. (d) *Degree of reaction*.—In 52.17 % of the cases the inflammatory reaction was moderate, and in 47.83 % pronounced. (e) *Unilaterality of the disease*.—The malady attacked one eye alone in 69.26 %, and both eyes in 30.74 % of the cases. (f) *Response to treatment*.—Mercury was efficacious in every case where its action was noted. In conclusion, Verhaeghe expresses the opinion that some of the clinical peculiarities of the disease, as unilaterality and slight reactionary phenomena, are the simple consequence of the good effects of treatment. Apart from the result of mercurial treatment, he believes that the symptoms of the disease are not marked enough to justify a diagnosis. In other words, it is impossible to decide from the mere clinical examination of an eye suffering from interstitial keratitis whether the ailment is due to inherited or to acquired syphilis. S. S.

(11) The cases demonstrated at the Polyclinic by **Paton** included specific iritis, lacrymal obstruction due to syphilitic periostitis, interstitial keratitis, and choroiditis due to the acquired and the inherited taint. Some philosophical remarks are appended with regard to the pathology of syphilitic affections of the eye in general. In this connection Paton attaches considerable importance to the arterial changes, and the way in which they determine the nature and the distribution of the lesions, secondary and tertiary.

(12) **Collins** reports the following case of a man, aged 24 years, whom he first saw at Moorfields Hospital on October

27th, 1898, suffering from a sore having all the characteristics of a hard chancre on the left lower eyelid. On November 12, he had a rash on the skin and a sore throat, in spite of the fact that he was put on mercury from the first. In June, 1900, he came complaining that his left eye had been inflamed for two months, and he was then seen to be suffering from interstitial keratitis, which cleared up under treatment. In five other cases the author has seen he found that keratitis came on only in the eye which had previously been affected by the primary sore. In this paper Collins records another case of interstitial keratitis in a woman, aged 25 years, who had had the primary sore on her lip. In these six cases the interval of time separating the primary sore from the secondary eye trouble varied from five months to ten years.

C. D. M.

(13) A married woman, 27 years of age, was affected with intense interstitial keratitis of one eye, due to inherited syphilis. When seen by **Trantas**, she was in the eighth month of pregnancy. Her other eye showed choroidal lesions between the equator and the ora serrata. There were, besides, other evidences of hereditary syphilis shown by the teeth, the facies, and the palate. In spite of vigorous mercurial treatment, the condition of the eye became worse, the cornea perforated, and the eye was eventually lost. At term a dead child was born. Some two months later the patient again became pregnant, and soon afterwards her other eye became affected. Notwithstanding vigorous specific treatment, the keratitis pursued a malignant course, sight became almost abolished, and it seemed probable that the eye would be lost. **Trantas**, believing that the disease was rendered intractable by pregnancy, caused artificial abortion to be induced. The eye began to improve almost at once, so that a week after the interference, the patient had regained a certain amount of sight, and seventeen days later could count fingers at 0 m. 10. The last note, made thirty days after the induction of labour, stated that the woman could then find her way about unaided.

Trantas concludes his communication with some remarks upon the frequency of anterior choroiditis in cases of inherited syphilis. In doing this, he points out that the lesions must often escape notice unless digital compression upon the ciliary region is carried out at the same time as the ophthalmoscopic examination.

S. S.

VI.—MISCELLANEOUS.

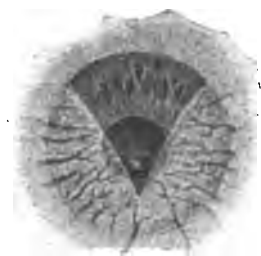
Scheer, M.—Retinal hæmorrhages due to compression of the thorax. (Netzhautblutungen in folge von Compression des Thorax.) *Graefe's Archiv f. Ophthalmologie*, 59, 2, 11 Oktober, 1904.

Compression of the thorax leads in comparatively frequent cases to congestion in the area of the jugular veins; but, although hæmorrhage into the orbit occasionally occurs, hæmorrhage into the retina is as rare as it is into the brain. This fact has often been commented upon, and is generally explained by the compensating influence of the intraocular pressure. But in **Scheer's** case there were two preretinal hæmorrhages in the left eye. The trauma was not very severe, the patient having been caught between two railway buffers. He was suffering from pleural hæmorrhage, but without fracture of the ribs. The hæmorrhages were eventually absorbed.

R. GRUBER.

Fejer, J.—On two rare forms of corneal inflammation. (Ueber zwei seltene Formen der Hornhaut-Entzündung.) *Centralbl. f. prak. Augenheilkunde*, Juli, 1904.

Fejer's first case, that of a female aged 49 years, who came to him with an inflamed left eye which, on examination, showed conjunctiva somewhat congested, moderate ciliary injection, cornea almost completely opaque, except for a triangular piece, the base of which (8 mm. wide) lay at the upper margin, while the apex reached down almost to the limbus below



(see figure). The rest of the cornea was covered by numerous large blood-vessels, which made the surface uneven; the margins of the clear triangle were sharp and bounded by a greyish-white line of thickened epithelium. Tension normal; vision, fingers at 2 m. Fundus normal. In spite of all treatment the condition grew slowly worse, the triangular clear part became gradually smaller, and, finally, the whole cornea became opaque.

Fejer's diagnosis of tuberculosis of the cornea was based upon the tuberculous appearance of the patient and the curious form of the opacities. He attempted to stain bits of tissue for tubercle bacilli, and transplanted other pieces into the anterior chamber of guinea-pigs. In all, however, the result was negative.

Fejer's second case was that of a man, 58 years of age who had suffered from gout for many years. Blood-vessels sclerosed; joints markedly deformed. His eye trouble began

three months ago, and consisted of an ulceration of the cornea which alternated between the right and left eye. The ulceration was sickle-shaped, deep, and purulent, and situated near the margin of the cornea. It was accompanied by marked ciliary injection and photophobia. Under pilocarpine and a bandage, the condition rapidly improved and the cornea became clear, only to recur again within a few days in the other eye. This went on for some considerable time, until the whole of the peripheral parts of the cornea were opaque and uneven from the numerous scars. Patient was finally discharged after five or six weeks, with R.V. = 5/30 ; L.V. = 5/50, which slowly improved to 5/15 and 5/10 respectively. The treatment of this case consisted in exhibiting uricidin and Salvator water internally and, locally, hot fomentations, scopolamine drops, and dionine powder, which latter was of the greatest service. A. LEVY.

Mori, M.—Upon the so-called "hikan." (Ueber den sog. Hikan-Xerosis conjunctivæ infantum event. Keratomalacie.) *Centralbl. f. die medicin. Wissenschaften*, 1904, 51.

"Hikan" is a peculiar disease of children which in Japan appears epidemically during the three so-called diarrhœa months, July to September. It is identical with ophthalmia Braziliana, and with the eye disease which appears in Russia during the fast seasons. It attacks children of from 2 to 5 years of age, generally after weaning. The principal symptoms are diarrhœa, voracity, distension of the abdomen, wasting, dryness of the skin, night-blindness, and xerosis of the conjunctiva, which is seen rarely or only in the later course of the disease. In severe cases the hair loses its sheen and becomes dry; the cornea becomes opaque; there is hypopyon and prolapse of the iris; and the case ends in complete disorganisation of the eyeball. These symptoms naturally do not appear in every case. In Europe the disease occurs but seldom. Mori believes that the disease is essentially due to a deficiency of fat. In this respect the diarrhœa plays a prominent part, leading, as it does, to a reduction in the absorption of fat. On this theory the author has, in spite of the diarrhœa, used cod-liver oil, and by that means has obtained cure even in severe cases of "hikan."

Brav, Aaron.—The use of atropine in ophthalmic practice. *Therapeutic Gazette*, 15th April, 1904.

Sachs, Ernest.—A case of amaurotic family idiocy. *Bulletin of the Johns Hopkins Hospital*, March, 1904.

A child, aged fourteen months, the offspring of Russian Jews, was first seen in June, 1903, when the diagnosis of spastic family idiocy was obvious from the general condition and the typical retinal picture. There was no history of similar disease

in either the mother or the father's family. The illness dated from an attack of measles at one year old. Upon examination, patient was found to be a sickly-looking child, equally unable to hold its head up, to speak, or to crawl. The child took notice of objects, but did not appear to see well at the periphery of the field. Some stiffness of arms on passive motion. Deep reflexes much exaggerated in arms and legs. Flexor response of all the toes on plantar stimulation. Sensation unaffected. Pupils (moderately dilated) equal and active. The ophthalmoscope revealed the characteristic picture of the disease. In October the child developed some difficulty in swallowing its food, and blindness became complete. The child died in February, 1904—that is, about eight-and-a-half months after he first fell under observation. The two unusual features of the foregoing case were (1) the disturbance in deglutition, and (2) explosive laughter not dependent upon outside stimulus.

Valude. — **Keratoconus in pregnancy.** (*Ceratocono e gravidanza.*) *Rivista Italiana di Ottalmologia*, February, 1905.

Valude reports an interesting case in which the patient during pregnancy became the subject of marked conical cornea, so that the visual acuity was reduced to R. 7/10 and L. 2/10. When the pregnancy ceased, the cornea returned to its normal shape and the vision returned. He regards the disease as a form of corneal rickets, and recommends the administration of glycerophosphate of lime.

HAROLD GRIMSDALE.

Marshall, Major D. G.—**An instrument for preparing and carrying cover-glass films.** *Lancet*, 7th May, 1904.

The little appliance shown in the illustration was primarily invented by Marshall for the making and keeping of blood-films.



but it will probably be found useful by ophthalmic surgeons and others in preparing pus films for bacterioscopic examination. The aluminium case consists of a central portion and two

hinged sides. The former includes half a dozen hollows, into which the cover-glasses fit in such a way that their upper surfaces lie flush with the aluminium surfaces. The hinged sides are lined with india-rubber, in order that when closed they may keep the cover-glasses in place. For use, the cover-glasses are slid into the "cells," and kept in place by the hinged sides being turned down. They are then smeared in the usual way and allowed to dry. For transport, the case can be closed by an elastic band and wrapped in paper.

Swanzy. H. R.—On transillumination of the Sclerotic.
Ophthalmic Review, February, 1905.

After describing Leber's instrument for transillumination of the sclera, Swanzy expresses his opinion that this method of examination, so useful in the diagnosis of intra-ocular tumours, is not employed as widely as it deserves. Transillumination is of the greatest service when although the existence of an intra-ocular neoplasm is suspected, yet a positive diagnosis with the ophthalmoscope cannot be made, owing to detachment of the retina or opacity of the media. Under such circumstances, the illuminated rod has merely to be placed upon the sclera of the cocaine eye, and if a neoplasm lie internal to the point where the rod has been placed, the pupil will fail to light up with the familiar red glow from the choroid. The rod, should the first examination prove positive, is placed successively upon all accessible points of the sclera. There is one obvious limitation to the method, namely, that a tumour may be confined to the posterior part of the eyeball out of reach of the instrument. Hence, if a red glow can be obtained through the pupil we are only justified in concluding "that no tumour is present in the region which can be reached with the glass rod." Swanzy gives details of three cases, in two of which the presence of a choroidal tumour was rendered practically certain by the use of scleral transillumination.

De Schweinitz, G. E.—Concerning certain non-traumatic perforations of the macula lutea. *Trans. American Ophthalmological Society*, Vol. X, Part II, 1904, p. 228.

"Hole at the macula"—i.e., traumatic perforation of the macula—is a condition to which considerable attention has been paid in recent years, particularly by Kuhnt¹, Haab², and Ogilvie³. Its ophthalmoscopic appearances, as well known, are tolerably constant. A slightly punched-out hole, either circular or oval in shape, lies in the macular region of the fundus. The area is brick-coloured, with sharply marked edges and stippled bottom, and it may be crossed by pigment lines. The lesion, which is permanent, may or may not be associated with a

scotoma. In a certain number of cases, as pointed out by Ogilvie, detachment of the retina is present. De Schweinitz in the present communication points out that an identical lesion may follow iritis or iridocyclitis in the eyes of elderly people, especially if the latter are the subject of arterio-sclerosis. He gives particulars of two cases of the kind, for the details of which readers are referred to the original communication.

REFERENCES.

1. Kuhnt.—*Zeits. f. Augenheilk.*, 1900, p. 105.
2. Haab.—*Ibidem*, p. 113.
3. Ogilvie.—*Trans. Ophthalm. Society*, Vol. XX (1900), p. 202.

Liebrecht.—Two cases of metastatic affection of the eye. (*Zwei Fälle von metastatischer Augenerkrankung.*) *Klin. Monatsbl. für Augenheilk.*, 1903, II, p. 124.

First case.—A man of 39 years, with metastatic streptococcus-ophthalmia, following injury to the right side of the chest. A fortnight after the accident iritis set in, then exophthalmia and chemosis. The enucleated eye showed suppuration in the anterior part of the vitreous body, specially affecting the ciliary body and iris. At the margin of the affected area streptococcus chains were found in abundance, and similar bacteria were met with in the supra-retinal cavity, in the pigment epithelium, and in the external granular layer. The granular layers showed degeneration of the granules. The bacteria had penetrated from the choroid, and had set up choroiditis. *Second case.*—Staphylococcus septicæmia, which quickly resulted in the death of the patient, a young man. On examination of the choroid, white nodules were visible to the naked eye, and these, under the microscope, proved to be abscesses, in the middle of which were coccus foci, immediately below the membrana elastica. The retina showed only isolated hæmorrhages. **Liebrecht** directs attention to the similarity of the ophthalmoscopic image with that of miliary tuberculosis of the choroid.

A. BIRCH-HIRSCHFELD.

Gendron.—Difficulties in the diagnosis of glioma retinæ. (*Des difficultés dans le diagnostic du gliome de la rétine.*) *L'Ophthalmologie Provinciale*, avril et mai, 1904.

Gendron calls attention to the difficulty in distinguishing between glioma and cataract in certain cases, and to the fact that, in the former disease, the tension of the eyeball may be subnormal before perforation has taken place. R. J. COULTER.

REVIEWS.

Theorie und Praxis der Augengläser. Von DR. E. H. OPPENHEIMER, Augenarzt in Berlin. Berlin, 1904. Verlag von August Hirschwald.

This is a book of 200 pages on "Spectacles and Eyeglasses, in theory and in practice." Dr. Oppenheimer appears to be well equipped for the task he has undertaken. He knows his German workshops well, and evinces a particular acquaintance with modern American work, but he does not seem to be so familiar with the work of English opticians during the last ten years. After a short history of spectacles he gives an account of their manufacture, their several parts are described, and materials are discussed. There are chapters on the advantages and disadvantages of wearing spectacles; on the different forms of spectacles and eyeglasses, on so called "orthopædic" spectacles for special cases, as for ptosis, entropion, epicanthus, etc.; useful hints are given as to the proper way to wear spectacles, with talks about and calculations of the effects of a bad position; there is an account of the materials of lenses; different forms of lenses and their relative advantages; the notation of lenses and prisms; and methods of testing the accuracy of spectacle work. Perhaps the most valuable pages of the book are those devoted to a bibliography. Dr. Oppenheimer has searched the transactions and archives of all the societies from 1880 to the present day, and has collected and arranged by subjects a quantity of matter, English, French, German, and Italian (there are 226 separate papers and publications) which should prove of the greatest service to students and investigators.

There are few subjects of interest connected with spectacles, their frames and lenses, which are not more or less adequately dealt with in the pages of this book. On the subject of tinted lenses Dr. Oppenheimer quotes some astonishing claims to the supposed therapeutic properties of different colours; there is a French case of colour-blindness cured by a glass of a special tint, and an English case of retinal detachment cured by a blue glass. With regard to these cases, Dr. Oppenheimer shows a becoming scepticism, and his own experiments in a similar direction have been without favourable result. Perhaps, however, even he over-estimates the value of exact tint in ophthalmic work, although he is right in demanding a more exact calibration of the strength of tints, and promises in the near future a practical suggestion in this direction. Dr. Oppenheimer would probably be interested to know of the work that has recently been done by London opticians with a view to calibrating tinted glasses by their percentage of absorption.

Confusion in prism notation seems to exist in Germany as well as in England. There, also, the unsatisfactory method of measuring prism by the geometrical angle appears to prevail. Dr. Oppenheimer rightly points out the relative advantages of basing the measurement on the deviating angle. An illustration of these advantages may be found in the two tables of prism equivalents of decentered spherical lenses given on p. 190. The first table is calculated to angles of deviation, and is, of course, a table of natural tangents, applicable to any kind of glass. The second is referred to the geometrical angle of the prism, and the value of the refractive index of the glass must be introduced into the formula. By the way, the note appended to Table I applies not to that table, but to Table II, and 1.54 is too high a value for most of the glass used for spectacle work in England.

On the subject of periscopic lenses Dr. Oppenheimer gives a somewhat inadequate account of Ostwalt's and Percival's calculations. He falls, moreover, into the common error of condemning periscopic lenses on the score of spherical aberration; overlooking, apparently, the limiting effect of the aperture of the eye. This is the more surprising as he sees and describes very lucidly in another connection the bad effects of oblique vision through a spherical lens.

On the whole, the book is an excellent one. It is well arranged; the bibliography has already been alluded to; there is a comprehensive table of contents, a satisfactory index, and a profusion of illustrations. Dr. Oppenheimer, in his preface, mentions the lack of a good text-book on spectacles in his own country. It would not be easy to find so well written a book on the same subject in the English language.

The Conjunctiva in Health and Disease. Being a Record of some Research. By N. BISHOP HARMAN, M.A., M.B.Cantab., F.R.C.S.Eng. London: Baillière, Tindall, and Cox, 1905. Demy 8vo. Price 10/6 net.

The research on which Mr. Bishop Harman's book is founded is partly historical, partly statistical, but chiefly original, and the last-named is far the most important. Mr. Harman has evidently studied diseases of the conjunctiva with great care, has formed his own opinions, and expresses them confidently. All forms of conjunctival disease are considered, but space renders it necessary to call attention to some of them only.

Of history we have practically nothing beyond a description of the great epidemic of Egyptian ophthalmia, which appeared in this country at the end of the XVIII. century. In the preface, the author, it is true, implies that Leah's "tender eyes" were due to conjunctivitis; and this seeking for causes is shown throughout the work. It would be interesting to have Mr.

Harman's opinion of the strange case of Tobit—but perhaps he does not read the Apocrypha.

The statistics are used chiefly for (what the author calls) a "sociological" enquiry. By means of many charts is shown the apparent influence of age, sex, season, and surroundings on the incidence of different forms of conjunctival affections. The young, females, and the dirty suffer most, especially during the second quarter of the year. In the case of recent trachoma, aliens suffer ten times as much as do natives. But the conclusions drawn from the Moorfields Hospital would inspire greater confidence, had the records for more than one year been analysed. In view of Mr. Harman's repeated reference to germ-laden London dust as the cause of conjunctival trouble, it would be interesting to have a comparison between the year 1903—a very wet year—and 1902, the year selected by the author. There is no convincing evidence that conjunctivitis due to microbes spreads by aerial contagion. Mr. Harman thinks the immunity of the conjunctiva amidst this host of floating foes is due only to its great power of resistance; and in support of this view he inserts a ghastly picture of a case of lupus, in which one eye has been lost.

The chapter of the general anatomy of the conjunctiva and lids and their relation to skin, is supplemented by another on the lymph follicles. The position chosen for this chapter—just before that on trachoma—leaves the reader somewhat in doubt whether the author considers these follicles to be pathological, or whether he places the chapter where it is as a warning against mistaking follicles for trachoma. The 58 per cent. of visible follicles found by the author amongst healthy children is certainly a smaller proportion than is usually present amongst the London poor. There is a curious suggestion that a sudden rise in the percentage amongst girls at the age of about nine years is due to lice on the scalp. Mr. Harman's objection to the term follicular conjunctivitis seems a little fanciful, the condition being usually recognised as one in which, with apparently non-contagious conjunctivitis, there is a marked increase of the visible follicles. That germs of some kind are often present in these cases is not surprising, for Mr. Harman's own investigations show that the great majority of healthy eyes are not sterile.

Bacteriology is treated in a general way in a special chapter, but in considering each disease the pathogenic microbes are more fully described and illustrated. In the healthy eyes examined, 28 different microbes were found, most of them diphtheroidal, few of them such as usually give rise to conjunctivitis. For making blood cultures in this investigation Mr. Harman has devised a "rapid and faultless" plan: a conjunctival vessel

is pricked, and the blood obtained ready mixed with the microbes present in the eye.

Cases of conjunctivitis are considered in two groups, comparatively simple catarrhal cases, and the more chronic forms which tend to leave permanent traces of their action. All the simpler forms are clearly described, except, perhaps, mucopurulent conjunctivitis, the account of which leaves one under the impression that Mr. Harman can never have seen a serious outbreak of this sometimes severe affection. For the treatment of all these cases the author considers that the so-called germicidal lotions have no greater value than flushing with tears or some simple fluid. The treatment is, otherwise, that usually adopted.

The account of purulent conjunctivitis is full and interesting. In the blind schools of the London County Council, Mr. Harman found that 40 per cent. of the cases had been caused by the gonococcus, 38.6 per cent. resulting from ophthalmia neonatorum. A warning is given against trusting for diagnosis to direct film preparations only, since Foulerton's pseudo-gonococcus may mislead us. For treatment, the first essential is thorough washing; promiscuous swabbing with silver of an eye full of discharge is described as adding "myriads of minute particles to the stew." The colloidal preparations of silver are considered useless. The power of resistance to treatment the author ascribes to the intercellular position of the gonococcus in relation to the surface epithelium of the conjunctiva. This persistence in keeping alive appears to have an important bearing on the author's view of the nature of trachoma.

Mr. Bishop Harman is of opinion that but for aliens trachoma might be looked upon as practically extinct in England. It is to be hoped that he has good grounds for this opinion. There is, however, no indication in his book that he has sought for evidence in quarters where for many years past the disease chiefly flourished — Poor Law Institutions. It used to be said that cases of trachoma attending the London Hospitals could generally be traced back to one of these. For fourteen years, however, the ophthalmic institution at Hanwell continued to receive all forms of conjunctivitis in children who were sent from the Metropolitan area by the Guardians of the various districts. Mr. Sydney Stephenson, who at Hanwell had charge of some thousands of these cases, might be able to show what proportion was trachoma. The steady work carried on for so many years at the Hanwell Ophthalmic School must have had considerable influence in reducing the number of cases of trachoma in London. Whether nearly extinct or not, trachoma forms the centre of interest of Mr. Harman's book, and remains the most interesting of all forms of conjunctivitis. Nor is the reason for this abiding interest far to seek. Its

arrival in England at the end of the XVIII century gave to ophthalmology an impulse which lasted till the birth of bacteriology. It causes endless suffering and injury. It has, perhaps, been more written about than any other disease of the eye; and hosts of skilled bacteriologists have studied it. Yet to this day it remains somewhat a mystery.

Mr. Harman, after careful consideration of the question, has adopted the view that trachoma results from the action of an attenuated gonococcus, and that exacerbations are caused by the Koch-Weeks bacillus. Evidence a good deal stronger than any we possess will be necessary before we shall be justified in accepting this theory.* In the account given of Egyptian ophthalmia it is plainly indicated that the disease was really purulent ophthalmia, many of the cases by lapse of time, becoming chronic trachoma. Does a case of pure gonococcal conjunctivitis ever, in our day, pass on into trachoma? Was the gonococcus at the end of the XVIII century different from the gonococcus of to-day? Is there no such disease seen now as acute trachoma? Mr. Harman deals only with either an insidious chronic disease or, what he calls, "recent" trachoma.

For treatment, Mr. Bishop Harman is not in favour of operation, brossage or expression, but thinks that scraping is of advantage. Electricity, X-rays, and radium are, in his experience, worse than useless, and we are left to rely on our old friends silver nitrate and copper sulphate. It is, by the way, interesting to remember that a preparation of copper was used by Hippocrates in the treatment of inflamed eyes.

Phlyctenular conjunctivitis is regarded by the author as herpetic, and a diagram showing its seat of election—the temporal and malar quadrants—is supported by another giving the nervous supply. Spring catarrh, of which a good account is given, Mr. Harman looks upon as keloidal in nature. Simple flushing with saline solution, which is soothing and washes away the *débris*, he finds the best treatment, and attention is called to the danger of adrenalin.

The book gives evidence of honest work and original thought, and is well worth careful perusal. But attention must be called to certain defects. A quaint quotation printed on the page facing the preface appears to be an appeal for gentle treatment. To neither author nor publishers, however, is it an unkindness to call attention to errors in a first edition. Mr. Harman's book deserves more careful supervision in its passage through the press. Printers' errors are common. On page 92 within the space of six lines there are four. Twice we have

* There is nothing new in this theory, which was originally enunciated by Von Arlt many years ago. It has been more or less adopted by Goldzieher, Fuchs, and some other Continental observers.—EDITORS.

the new spelling "parguiculoe," and twice the presence of pediculi in the lashes is called *pityriasis* ciliorum. The date of Dr. Ware's book is given both as 1730 and 1780. Mistakes in grammar, too, may be found, chiefly a confusion between singular and plural. In style we find here and there specimens which are certainly not good. Mr. Harman writes, "The sweat-glands have become aggregated as the lachrymal gland, a compact mass discharging *their* secretion by some dozen ducts in one region of the upper fornix. The *compaction* of its parts is not always complete." Speaking of the greater liability of females than males to parasites and to disease, he writes, "Women by their configuration run a greater risk of soiling, in their necessarily more frequent use of seated sanitary conveniences, appurtenances not too scrupulously kept amongst the poor." The laboured style of this sentence simply obscures its meaning.

Encyklopädie der Augenheilkunde. Herausgegeben von Prof. Dr. O. SCHWARZ in Leipzig.

Dr. Schwarz's cyclopædia of ophthalmology was commenced in the year 1902, and during the course of last year (1904) two parts appeared, namely, numbers 10 and 11. These two parts deal with subjects between "Ichthargan" and "Ligamentum pectinatum iridis." So far as it has yet gone, the book extends to 512 pages.

Le Fond de l'Œil dans les Affections du System Nerveux.

Par le DR. JEAN GALEZOWSKI, ancien externe des Hôpitaux de Paris ; avec 3 planches en couleurs hors texte. Paris : Félix Alcan, éditeur, 108, Boulevard Saint-Germain. 1904.

The intimate connection, embryological, anatomical, and pathological, which exists between the brain and the nervous apparatus of the eye is so widely recognised that an attempt to describe systematically the different ocular conditions known to occur in connection with the various diseases of the nervous system needs no apology ; but if any were required, the excellent and thorough manner in which the younger Galezowski has dealt with the subject in the book under notice would amply justify its publication.

The author has studied the ocular conditions present in a large number of patients suffering from various nervous diseases, and bases his work on the results of these observations and an exhaustive study of the literature of the subject. He gives a very complete account of the signs, symptoms, and course of the known ocular complications of each of the recognised diseases of the spinal cord, brain, and meninges, and of the more important neuroses, paying particular attention to such points as are likely to prove of value in establishing a diagnosis. A bibliography is appended to each section. This appears to be very complete,

but it is a pity that the titles of English articles are not uniformly dealt with, instead of being at times quoted in the original and at times translated into French, while a little care would avoid such inaccuracies in the spelling of names as "Rambaux," "Fitzgerald," and "Bumdenell Carter."

The book is well printed, pleasant to read, and contains much systematically arranged information. It constitutes a thoughtful contribution to the literature of a difficult subject, and will prove of value, not only as a work of reference, but also on account of the author's original observations which are recorded in it.

CORRESPONDENCE.

While *The Ophthalmoscope* will at all times welcome correspondence from its readers, the Editors do not hold themselves responsible for any views expressed in this column.]

"Atropine Irritation."

To the Editors of THE OPHTHALMOSCOPE.

Sirs,

I have just read a note by Dr. W. G. Sym upon atropine irritation in the April number of *THE OPHTHALMOSCOPE*. My experience is quite different. In at least fifteen cases of eczema caused by atropine drops have I prescribed atropine in the form of ointment. The ointment was compounded with alkaloidal atropine, vaseline and lanoline. In every instance the results were exactly the same as with the atropine drops—the ointment caused typical atropine dermatitis. I should be glad to hear what is the experience of the readers of *THE OPHTHALMOSCOPE* in the matter of atropine drops *vs.* atropine ointment.

I am, Sirs,

Yours etc.,

ADOLPH BRONNER, M.D.

BRADFORD, ENGLAND.

June, 1905.

Dr. Sym advocated not vaseline or lanoline as the excipient, but pure olive oil.—
EDITORS.

"The Optician Question."

To the Editors of THE OPHTHALMOSCOPE.

Sirs,

In the May issue of *THE OPHTHALMOSCOPE* a sympathetic attitude is assumed towards a proposed arrangement under which sanction may be given to non-qualified persons to correct defects of vision provided that a satisfactory result, as determined by the use of test types, is secured. Will you permit me to express my regret that you have lent the weight of your

authority to any such proposal. I cannot say what may be the experience of ophthalmic surgeons, but physicians not very infrequently find on ophthalmoscopic examination those beginnings of serious disease which are the index of grave local or constitutional disorder, though at the same time the patient's acuity of vision is in no degree compromised. In view of such a fact it is surely impossible for the medical profession to announce that visual defects can be safely treated by persons destitute of pathological and clinical experience if only a normal standard of vision is obtained. To do so is to incur responsibility for leaving in untrained hands those cases in which, though this condition is satisfied, the commencement of disease has already begun. The only safe position, I will venture to say, is to maintain that departures from health, whether visual or otherwise, can only be safely treated by those who have a theoretical and practical knowledge of disease, and that, though such a rule is often broken with apparent impunity, the risk remains all the same. If the public likes to accept the risk, that is for themselves to decide. But to construct a "golden bridge" by which members of the medical profession may become partners in so dubious a responsibility is conducive neither to the dignity of the profession nor the interests of the public. I agree that we ought not to say "opticians must not examine the eyes for errors of refraction nor sell glasses to correct them" because, in my judgment at least, the public should be free to please themselves in the selection of their advisers. But as such a proceeding in a certain proportion of cases will be disastrous to the persons immediately concerned, the profession ought to keep wholly free from the transaction. So far from the suggested "compromise" being "a moderate and business-like proposal" it seems to me to involve a complete sacrifice of the principle which asserts that responsibility in departures from health can only be undertaken with safety to the patient by those who have as a minimum the training and clinical experience demanded as preliminaries to a legal qualification to practise.

I am, Sirs,

Yours faithfully,

HARLEY STREET, W.

C. O. HAWTHORNE, M.D.

"Literary Etiquette."

To the Editors of THE OPHTHALMOSCOPE.

Sirs,

The (altogether) anonymous contributor of the note with the above heading in your May issue is apparently anxious to pick a quarrel between Mr. Devereux Marshall and myself. In this, I am happy to be able to inform him, his efforts have been quite

without success. For the information, however, of those who may have seen the note without having read the paper in the *Ophthalmic Review* to which it refers, I wish to correct two misstatements in the former. I did not "animadvert" upon Mr. Marshall's view of the proper method of treating suppurating eyeballs. My endeavour was simply to compare his view with that of the writer of the article. I did not express any personal opinion one way or the other, and, indeed, expressly stated that the controversy cannot yet be considered at an end.

Secondly, there is not the slightest justification for saying that my own references to Mr. Marshall's views were made to appear to be those of Enslin and Kuwahara. There is, indeed, no reference to him in their article. His views, however, are, as the writer of the paragraph justly says, well-known, and for that very reason I considered it advisable, in reviewing a paper on the subject, not to ignore them, nor in my innocence did it enter into my head for a moment that this procedure could possibly give offence to anyone. Your contributor courteously refers to my paper as "what purported to be a review." Whether or not it succeeded in being a good review, it certainly did not purport to be a mere translation.

I am, Sir,

Yours etc.,

36, WEYMOUTH STREET, W.

A. HUGH THOMPSON.

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ORIGINAL COMMUNICATIONS.

A CASE OF TUBERCLE OF THE CHOROID, PRESENTING CERTAIN CLINICAL AND PATHOLOGICAL PECULIARITIES.*

BY

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M.D. (Lond.), M.R.C.P.

AND

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OPHTHALMIC SURGEON TO THE NORTH-
EASTERN HOSPITAL FOR CHILDREN,
LONDON.

In our collective experience, tubercle of the choroid is scarcely sufficiently uncommon to justify the publication of a single case. At the same time, the one we are about to relate possesses some clinical and pathological peculiarities marked enough to warrant a brief account of its main features.

The facts are as follows :—

* A communication read at the provincial meeting of the *Society for the Study of Disease in Children* at Sheffield, June 17th, 1905.

Ada S—, 3 years, was admitted to the North-Eastern Hospital for Children, London, on July 23rd, 1903, suffering from "bronchitis and convulsions." According to the history, the child had been well until about two weeks before admission, when she was noticed to breathe noisily at night and to be short of breath during the day-time. The personal history was unimportant, except, possibly, for the fact that the child had contracted measles when twelve months of age. The parents were healthy. There was no family history of tubercle, although it was somewhat significant that the other children in the family, three in number, were said to be subject to bronchitis.

Upon admission.—The child, whose weight is 24½ lbs., has a slight cough, but beyond a few rhonchi at the base of each lung, no physical signs can be made out in the chest. T. 101°F.; P. 124. R. 52.

Progress and Termination.—*July 29th, 1903.*—The spleen can be felt to extend 1½ fingers-breadth below the costal margin. The child now weighs 24 lbs. or a decrease of 4 ozs. as compared with the weight on admission to hospital. *August 4th, 1903.*—The child's temperature since admission has ranged from 97.6°F. to 103°F., and has usually shown a tendency to rise at night to within 102°F. and 103°F. Respirations have varied from a minimum of 32 to a maximum of 76 per minute. The pulse-rate has been from 100 to 160, and it may be noted that the rate, as a rule, has been somewhat less at night than in the morning. The respirations are rapid and somewhat laboured, and the slightest exertion brings on dyspnoea and cyanosis. Note, resonant all over chest; a few rhonchi and râles can be heard. *August 6th, 1903.*—Beyond a few bronchitic accompaniments, little to be heard in chest, which is resonant. The respirations are very frequent (64 to 92 per minute) and out of all proportions to the physical signs that are present. The liver and the spleen are slightly enlarged. Temperature 100°F. to 102°F. Pulse 152 to 168 per minute.

Ophthalmoscopic examination revealed the following conditions:—neither optic papilla is well-defined; retinal veins large and somewhat tortuous; retinal arteries relatively small and inconspicuous. Each fundus oculi (*see Plate 1, figs. 1 and 2*) contains numerous fawn-coloured tubercles, ranging in size from those that are almost equal to the optic disc in diameter, to others having a diameter about equal to one-quarter of the disc. They are round or oval in shape, and are discreetly arranged almost exclusively in the neighbourhood of optic disc and yellow spot—that is to say, in the so-called "central region" of the fundus. The yellow spot region itself is not invaded. Several of the tubercles are crossed by the retinal vessels, which manifest no local changes. The number of individual tubercles

Plate I.

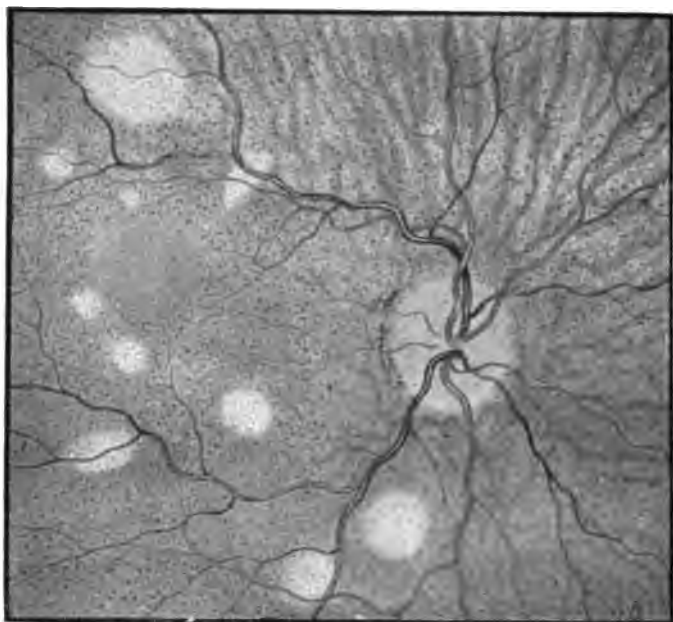


Fig. 1

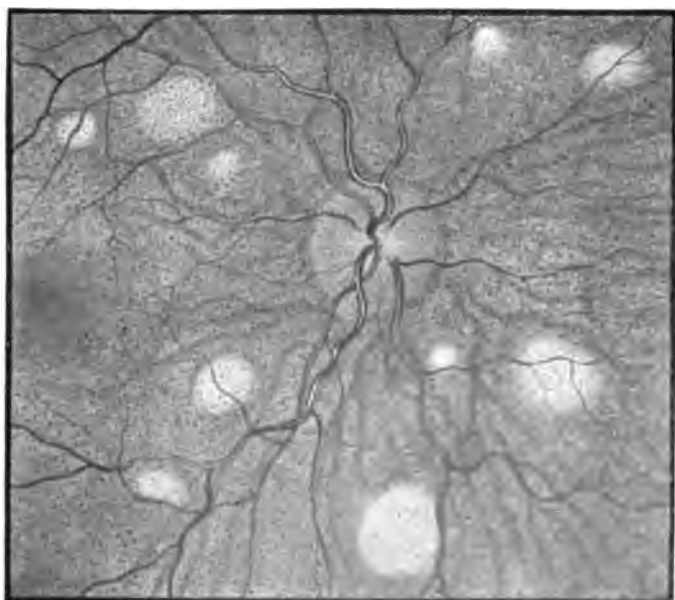


Fig. 2



in each eye was computed as twelve. Close examination by the direct method showed that the fawn-coloured surface of individual tubercles was stippled with fine retinal pigment, which, for that matter, was present over the unaffected parts of the fundus.

In face of the foregoing discovery, a diagnosis of acute miliary tuberculosis was made upon this date (August 6th, 1903).

The child died comatose on August 11th, 1903—that is to say, 33 days after the beginning of the illness; 19 days after admission to the hospital; and 5 days after the diagnosis was made.

Autopsy.—The *post-mortem* examination, made twenty hours after death, revealed typical acute miliary tuberculosis, affecting specially the lungs, spleen, and choroid. The protocol was as follows: the lungs were very oedematous and studded with numerous miliary tubercles, but neither yellow nodules nor caseation was seen. The pleura was free from tubercle. A few tubercles were found in the pericardium. Although the bronchial glands were not much enlarged, yet some of them included tubercles. The bronchi contained mucus in some quantity. The larynx and trachea were free from morbid changes. The brain was normal, except for the presence of a few fine miliary tubercles in the Sylvian fissure and on the cerebellum. Miliary tubercles were also found in the spleen, kidneys, and liver, the latter of which showed fatty changes. The mesenteric glands were not enlarged. There were several ulcers (?tuberculous) on the external surface of the ileum, although none were found in its mucous membrane. Bladder, uterus, ovaries, and peritoneum were free from tubercle.

Pieces of the lungs and spleen were removed for microscopic examination. The eyes were placed unopened in formol, 10%.

Microscopical examination.—(a) The *spleen* presented a typical picture of tuberculosis, being literally riddled with many giant-cell systems of the most characteristic kind. Tubercle bacilli were found. (b) The *lungs*, or at least those parts submitted to the microscope, also revealed numerous miliary tubercles. The intervening areas were consolidated. The consolidation consisted of cellular products in the alveoli. Some of them were of very large size, but, for the most part, they were of moderate diameter with single nuclei. The alveoli in many cases contained also cells with horse-shoe shaped and multiple nuclei. In parts the alveoli were stuffed with fibrin plugs which contained but few cellular elements. Infrequently a combination of the catarrhal and the fibrinous process was noticed. The alveolar walls were thick, proliferating, and engorged. The bronchial tubes had shed their mucous membrane, and the smaller ramifications were stuffed with cellular products.

Tubercle bacilli were demonstrated without difficulty. (c) The eyes were frozen, and bisected in a plane parallel to the horizontal meridian. Each hemisphere thus obtained was divided into an anterior, a middle, and a posterior third, each of which was then embedded in celloidin and cut for the microscope. Slight inflammation of the optic nerve was present, as shown by the swelling of the papilla, the increased number of nuclei and of capillary vessels in the nerve, and the exudation of inflammatory products into the intersheath space.

Beyond this neuritis, the only ocular lesions found were those characteristic of acute disseminated miliary tuberculosis, namely, local accumulations of small round cells, with a few giant-cells of the Langenhans type, situated in the thickness of the choroid, and free from pigment. Some of the choroidal tubercles showed more or less central areas of caseation, as evidenced by the absence of defined elements and the imperfect or peculiar reaction to such stains as hæmatoxylin, eosin, acid fuchsin, and picric acid. Some of the choroidal tubercles showed vertical or transverse sections of choroidal vessels, which had undergone endarteritis.

There were two pathological curiosities about the specimens. In the first place, there appeared to be in places a general infiltration of the choroid with small round inflammatory cells; and, secondly, a few outlying areas of tubercle of the retina were found.

The drawing (*Plate 2, fig. 1*) represents a typical tubercle formation in the retina. A fusiform mass of small round cells occupies practically the entire parenchyma of the choroid between the lamina vitrea, which is intact, and the suprachoroid, which is also preserved. Towards the centre of the tubercle lie six giant-cells, the nuclei of which are arranged towards the periphery. It will be noticed that the pigment layer of the retina is in place. A close examination of the choroid beyond the tuberculous formation will convince the attentive observer that the choroid contains a number of small round cells. In other words, in this particular case, a kind of general tuberculous choroiditis is present, in addition to the simple deposition of miliary granulomata. A few of the sections showed outstanding nodules of retinal tuberculosis—*i.e.*, nodules occurring independently of the choroidal deposits. Figure 2 represents one of these nodules. It is sharply bounded externally by the retinal pigmented epithelium, here cut rather on the slant. The inner nuclear layer can be traced over the nodule almost in an unbroken layer. The nodule itself is composed of elements almost identical with the neurons of the outer nuclear layer, with which, indeed, it appears to be structurally continuous. No other elements can be recognised in the nodule, a point that

Plate 2.



Fig. 2



Fig. 1



at once raises the question whether it is to be regarded as tuberculous at all. Whatever hesitation we might have felt upon this point at first was conclusively laid at rest later by finding a couple of tubercle bacilli in one of the retinal nodules. Tubercle bacilli were also demonstrated in several of the choroidal deposits in more or less close relationship with the giant-cells.

The anterior parts of the eye, including the iris and the ciliary body, manifested no tuberculous deposits.

Comments.—This case illustrates once again a fact that can scarcely be too widely recognised, namely, that by far the most trustworthy sign of acute miliary tuberculosis is furnished by the discovery of tubercles in the choroid coat of the eye. As regards the present case, the progressive wasting, the oscillating temperature, the rapid pulse, the cyanosis, and, especially, the hurried respirations without adequate physical cause, undoubtedly pointed to acute tuberculosis as the probable underlying disease. The condition, however, could never have been diagnosed with certainty on that slender evidence. The discovery of tubercles in the choroid settled the matter once and for all, in a way that nothing else could possibly have done. Despite recent statements to the contrary¹, we repeat that tubercle of the choroid is not uncommon. We recall the fact that in a former communication upon the subject (*Reports of the Society for the Study of Disease in Children*, Vol. I, 1901, p. 169) we found it to be present in exactly 50 per cent. of the forty-two cases of acute miliary tuberculosis and tuberculous meningitis that we examined with the ophthalmoscope. It is, therefore, not only a certain but also a common sign of the conditions named.

The present case, as we have already said, presents two peculiarities, *viz.*, a clinical and a pathological one. The usual clinical picture of acute tubercle of the choroid, as we have pointed out before (*loco citato*), is that of one to three round, oval, or reniform areas, usually of fawn colour, and not sensibly raised, situated near the optic disc and macula lutea. The characteristic lesion, as we then stated, is generally small, single, and limited to one eye. The case just related is therefore altogether exceptional, since the choroidal deposits are present in both eyes, are multiple, and, speaking broadly, are of unusually large size.

The pathological invasion of the retina by tubercle is, in our experience, most uncommon. We have searched through dozens of microscopical specimens, taken from upwards of twenty instances of tubercle of the choroid, without having succeeded in finding this change, except in specimens taken from the present patient. It may be safely assumed, therefore,

that foci in the retina in association with miliary tuberculosis of the choroid are anything but common. An even more uncommon finding would be a deposit of tubercle in the retina apart from any choroidal change. Yet such cases have been reported, amongst others, by W. A. Brailey², O'Sullivan and Story³, Sattler⁴, and, quite recently, by A. Knapp⁵, Spalding⁶, and Hancock⁷.

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CONGENITAL "WORD-BLINDNESS" AND ITS TREATMENT.

By

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The different portions of the cerebral cortex vary in the same individual in potentiality for organisation, and most adults are found to fall into one or other of the definite memory types—audial, visual, or motor. If the power for organisation of one particular centre is very low, defect is noticed when formal education is begun, if not before, and thus we have classes of children presenting congenital word-deafness, word-blindness, amusia, idioglossia, etc.

The credit of pointing out cases of congenital word-blindness rests largely with ophthalmic surgeons, such as Hinshelwood,¹ Nettleship², and Stephenson³, while its relations to corresponding conditions in other centres have been referred to by medical officers to Education Authorities, such as Kerr⁴.

It is now an instruction to all head teachers of schools under the London County Council that they shall submit to the Medical Officer every child at the age of seven who appears very backward or defective; in this way a great number of cases of word-blindness have been brought to light. The writer has calculated that 1 in 2,000 of all London Elementary School children may be expected to show word-blindness to a considerable degree; there are now nearly 100 instances of the condition noted in the case books at the special schools for mentally defective. Congenital word-blindness, therefore, is

more frequent than has hitherto been suspected ; it would seem that its frequency is greater amongst the lower classes. Although as regards life it has no "survival value," yet as regards position in the social scale its survival value must be considerable. In this connection it is to be noted that it frequently assumes a family type ; there are a number of instances of more than one member of the family being affected, and the mother often volunteers the statement that she herself was unable to learn to read, although she had every opportunity. The same tendency to family character is to be noted in the allied conditions of idioglossia, amusia, and congenital word-deafness.

Congenital word-blindness occurs considerably more frequently in boys than in girls ; so much so that the English cases hitherto recorded have been all boys, and the statement has even been made that it occurs only in the male sex. Wernicke, of Buenos Ayres,⁶ has, however, recorded cases in females, and in the writer's experience 25 per cent. of the cases have been in girls.

Frequently it is to be noticed that the condition is associated with an extremely good visual memory for things other than words ; the child is what psychologists term a "visual," and yet for "ideographs" no visual memory is present.

The foregoing points are illustrated by one or more of the following cases. The first case is one of congenital word-deafness, an analogous condition from which light as to the nature and treatment of word-blindness may be obtained. The remaining cases are of word-blindness.

CASE 1.—A bright, intelligent-looking, well-developed boy of 8 years.

Previous History.—Attended Infants' Department of ordinary school from age of three to that of seven, during which time he never attempted to talk. He was taken by his mother to a hospital, where he was examined for adenoids, but these were not found.

At seven he was brought to me (May, 1903) and was admitted to Gloucester Road Special School, and I made the following note : "Aphasia ; hears but does not talk. Looks intelligent."

In July, 1904 he had learnt to name objects pointed to, *e.g.*, "book" and "pen." He is very clever with fingers.

Family History.—Father's brother no speech until five. Sister, now aged five, does not speak.

Present Condition.—Healthy. Is not a mouth breather ; there is no discharge from ear. Palate well formed.

Hearing.—He hears readily words spoken more quietly than ordinary conversation, and will repeat them with correct intonation. He hears a watch readily at a distance from either ear. Although he hears words readily, he understands none. .

Sight.—Oculist's report, V. = 6/9. When speaking to him he keeps his eyes upon one's lips and seems to understand a few nouns by lip-reading.

Speech.—Repeats after one "Get me a pencil" as "Det me a pentil." He is able to name many objects shown him—"chalk," "pencil," "table," "chair."

Educational Attainments.—In spite of his handicap he has learnt to read small words, such as "cat" and "dog;" can do small arithmetical sums and is clever at all finger-work; can draw both from copy and spontaneously. Shown a picture of a house and asked to point out the "roof" he cannot do so, but if it is pointed out to him he immediately says "roof."

CASE 2.—Arthur S., admitted, æt. 7, to Special Class in 1901. Teacher reports that "he is painstaking and clever at all handiwork, good idea of colour and design, and excellent drawing memory. He has wonderful powers of observation, and excellent reasoning powers, but still has such a 'poor memory' that he cannot remember how to make l, p, y, and g; he is good at description of things, and pictures are a great help."

In March, 1904, the following report was written: He reads "It has three birds in it" as "To see best in to"; he mistakes the letters c and s constantly. He quickly and correctly does difficult sums in mental arithmetic, and can describe with great minuteness any scene he has witnessed; *his memory is only bad for word symbols*; his intellectual processes are carried on entirely in pictures, yet the visual word centre seems wanting. He is a bright and intelligent boy, of great ability in many directions, but all attempts at teaching him to read remain of no avail.

In November, 1904, he was again examined; 11,308 was written down in Arabic numerals, and immediately the boy said "eleven thousand, three hundred and eight." Asked to multiply it by 55, he did so easily. He was apparently reading what was upon the board, but on testing him it was found to be a feat of auditory memory; amongst the words on the board were "NOT," which, when written down separately, he said it stood for "ONE"; "BUDS" he read as "BRANCH"; HORSE he could not read (he mistook R for B); (*All these words he recognised with ease when spelt aloud to him*); they were all words he had just had in the lesson. The boy's desire to read is most painful; he is ambitious above the ordinary, yet he is unable to read the smallest words after years of careful teaching.

In May, 1905, he is able, with much difficulty, to make out a few three-letter words. This he does by tracing out the letters with his finger, and thus utilizing one form of kinæsthetic memory.

CASE 3.—Edward D., æt. 10. Obedient and affectionate boy, well grown. Has been in Special Centre two and half years. Is up to normal standard for age in all but reading. Calculation very good ; money sums done mentally, correctly, and with ease. Likes drawing and is good at it. Draws the Union Jack spontaneously. Does not recognise the word JACK when it is shown him, but does immediately it is spelt aloud to him. Is word blind, mistakes letter R for P, N for M or W. His articulation is good, has attended school regularly since age of three, very intelligent in conversation. Vision = $\frac{9}{6}$.

CASE 4.—Charles D., æt. 8. *Brother of previous case* ; healthy boy, but unusually restless. Is equal to average in all but reading. Recognises most of the letters, but mistakes some capitals ; can read no words and is not so good as his brother in recognising words when spelt out to him.

CASE 5.—Lilian C., æt. 13½. Has been at school since age of three, and in Special Centre five years. Is a capable trustworthy *girl*. Acts as mother to a family of younger brothers and sisters. Note made 1903 (July) ; visual word centre is inactive and is weakest part of brain, otherwise improving greatly. Does not recognise M or P., cannot read any word. Converses rationally, and is normal in every other respect.

CASE 6.—Willie W., æt. 7. A bright obedient boy, who is anxious to please. Has been four years at school under an excellent mistress. Is very good at numbers—above the average. *Has a marvellous visual object-memory*, and draws well. Recognises a very poor pictorial representation of a fox, but immediately afterwards fails to read FOX. Mistakes a few letters, R for B, W for M, and X for C. Auditory memory is not strong. Vision = $\frac{9}{6}$.

CASE 7.—E.A., æt. 9. A well-developed and well-nourished girl who appears somewhat dull ; there are no degenerative stigmata and she has had no serious illness. There is some deafness present, a whisper being unheard at 6 feet. *In spite of her hardness of hearing her auditory memory is much better than her visual memory.* She does arithmetic readily, recognises Arabic numerals without difficulty, but after five years' constant schooling, has learnt only two or three letters. She recognises the meaning of several words spelled out to her letter by letter. She has "a good ear for music." Vision is normal.

CASE 8.—J.H., aged 14, has been five years in a Special School. In March, 1901, it was noted : "Improving in everything but reading ; cannot interpret any word."

In November, 1904, no progress has been made in reading, although his attainments in other respects were normal. He did difficult problems in mental arithmetic with ease ; drawing is good ; and manual subjects excellent.

He cannot read the word "cat," although when spelt aloud, he recognised it at once.

A sister, S. H., passed through this school, and her final note states that she could do everything but read on leaving.

The mother states that she herself could never learn to read, although she had every opportunity. Five other children in the same family have been unable to learn to read.

Prognosis.—In the less serious or partial cases where the child is otherwise intelligent, other centres may be brought in to help, and, finally, the child may pass muster, not being a fluent reader or writer, but able to get along, or even to pass professional examinations. One such case the writer has known was of brilliant capacity and is now an excellent surgeon; he practically did no reading, but acquired all his knowledge by the ear at "grinds" and lectures.

In the more serious cases, if of fair social standing and good general intelligence, still much may be done by developing other memory centres; but if of dull intelligence or of poor parentage, it is scarcely likely that any progress will be made with reading, and the time expended in that direction would be better used in manual training.

Treatment.—The child should be placed in a special class in which he can obtain much individual attention from a teacher who is made aware of the nature of the defect. The initial difficulty in learning letters is chiefly due to the fact that the 26 signs are too great a number to be learnt and retained unless put to use in word building. The visual recognition of Arabic numerals, as Hinshelwood pointed out, is readily acquired, even without special instruction in most of the cases. It is probable that the earliest memory of letters is a muscular one; children continually confuse letters which have the same form but differ only in position, so that similar muscular actions are necessary in tracing them out; thus p, b, d, and q are continually mistaken even by normal children; also m and w and n and u. Letters should therefore be taught from large signs, children should be encouraged early to print them, and it would be very useful if every kindergarten class had a supply of large letters carved in wood which the children could handle and nurse. The most successful methods of teaching reading are those in which as soon as two or three letters are learnt they are used in the building of words, but for the word-blind this is impossible in the ordinary way. It is owing to the power the normal individual has of storing in his visual word centre the "ideographs" of words that the English language has ceased to be phonetic; words are seen and recognised as wholes and not as composed of letters, so that to a normal reader each word in his visual vocabulary has a single sign. It is probable that it is because

most other European languages remain largely phonetic that the condition has not attracted much attention abroad.

There is one method of teaching to read English which ignores in the early stages, at any rate, the visual word images. This is the phonic method. Miss Dale, of the High School, Wimbledon, has elaborated this method to great perfection, and word-blind children should be started upon her plan. In this the children associate from the beginning the form of each letter with the mechanism for producing the most usual sound for which it stands; thus each word is pronounced without calling upon the visual word centre at all, and the meaning of the word is arrived at, *via* a motor speed plus auditory memory. Miss Dale has an elaborate series of reading books in which only regular phonetic words are met with until the child is considerably advanced. A word-blind child should commence learning to read on this plan, and should progress fairly readily up to the time at which irregular words are introduced and ideographs become necessary.

At this stage other memories must be invoked and a little careful study of each child will show in which direction help is to be sought. When the particular memory is found it must be encouraged to the utmost; it will often prove to be a kinæsthetic memory. One child, by rapidly spelling the letters with the lips, will arrive at the meaning of the word, another will trace the letters in the air or on the book with the fingers, and thus arrive at the meaning. A child who came under the writer's notice was unable to assign the meaning to a word until he had written it himself; if he looked at the word CAT it conveyed no meaning, if he had it spelt aloud to him he could not arrive at the word (he was a poor "audial," as well as a poor "visual"), if he spelt aloud the word himself he could not tell what it was; but immediately he wrote it down, his puzzled expression gave place to one of intelligence and he shouted the word "cat." A "strong audial" may spell the word aloud or silently, and thus will arrive at the meaning by the auditory memory. In one of these ways an intelligent word-blind child may acquire some power of reading, even when the visual word centre remains very poorly developed.

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**GENERAL
ANÆSTHESIA IN OPHTHALMIC SURGERY :
A Criticism.**

BY

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A somewhat remarkable article on the above subject appears in the recently-published English edition of Professor Haab's *Atlas der Augenoperationen**. The rest of the book is so admirable and the author's opinions on matters pertaining to his own branch of surgery carry so much weight, that it is a matter for regret that he should have expressed opinions on the subject of anæsthesia, which in the light of our present-day knowledge are certainly retrograde. It is, of course, a well-known and generally acknowledged fact, that a great number of ophthalmic operations can be perfectly well done under cocaine anæsthesia, and that when this is possible it is to be preferred to a general anæsthetic, as thereby post-anæsthetic vomiting, a much dreaded complication after operations upon the eye, can be obviated. Professor Haab, however, goes very much further than this: he practically deprecates altogether the employment in his speciality of general anæsthetics, on account of their danger to life, and in support of this contention he quotes a number of alarming cases.

In some of his cases symptoms occurred so unusual as to be practically unknown. It appears that on more than one occasion his patient was seized after the operation by post-anæsthetic syncope, so severe in character that it required the united and long-continued efforts of several people to restore the patient to a condition of safety. Now, this is certainly very remarkable: during recovery from an anæsthetic, syncope, or even failure of the pulse, is very rarely seen, except in the mild form which precedes an attack of vomiting, yet Professor Haab has seen it frequently in his patients, not only after chloroform, but also after the administration of ether, and when one remembers the shortness of eye operations, the small quantity of ether which it is necessary to administer under these circumstances, and the stimulating effect of the drug, except when it is given for very protracted periods, it is indeed difficult to withstand the conclusion, either that the anæsthetic on the occasions mentioned was exceedingly badly administered, or that the author of the article was unduly nervous about his cases, and altogether over-estimated the danger of their condition.

*Edited by G. E. de Schweinitz, W. B. Saunders and Company, 1905.

The second important inference which I draw from the article, is that the writer appears, at any rate on several occasions, to have filled the double *rôle* of anæsthetist and operator. Even if he did not actually administer the anæsthetic, he appears to have been the chief authority in the choice of the particular anæsthetic administered, and to have been the prime mover in the various methods of resuscitation which he tells us were employed. Thus, he says: —“ I once allowed myself to be persuaded by a young woman to use a general anæsthetic—chloroform—and this same girl barely escaped dying under the anæsthetic . . . It is my rule never to employ general anæsthesia unless attended by at least two assistants, so that every resuscitating procedure may be performed correctly, vigorously, and persistently, without fatigue upon the part of the operator I formerly used ethyl bromide but gave it up entirely after witnessing a person, who is very near to me, develop cardiac weakness.”

If I am right in concluding that Professor Haab is in the habit of making himself responsible, not only for the operation, but also for the selection and administration of the anæsthetic, I am not surprised that dangerous symptoms have occurred in his practice so frequently that, as he himself tells us, he is now in the habit of taking with him two assistants for the purpose of resuscitating the patient when occasion arises. It is not disputed that with the employment of chloroform, deaths sometimes occur during the induction of anæsthesia, and it is fully agreed amongst trained anæsthetists, in this country at any rate, that anæsthesia should be induced by gas and ether, or ethyl chloride, except where there is some special contra-indication. It is not, however, sound teaching to deprecate the use of anæsthetics because dangerous symptoms may arise. These accidents may be obviated by the better education of students in the practice of anæsthetics, and by the employment, as far as possible, of anæsthetists, who have gained by experience, not only the necessary skill in administration, but also the judgment which enables them to select the particular anæsthetic or sequence of anæsthetics which is most suitable for any particular operation and for the particular type of patient with whom they have to deal. This applies to ophthalmic no less than to any other branch of surgery.

Professor Haab holds that it is not justifiable in minor eye operations to subject the patient to the risk of taking a general anæsthetic. Had he said “to the risk of the induction of anæsthesia by chloroform,” I should have heartily agreed with him, but when anæsthesia is induced by gas and ether and continued by chloroform, the risk is, in skilful hands, so infinitesimal that it is not worth taking into account. Even admitting that short operations on the eye can in a large number of cases be satisfactorily performed under cocaine, there must

still remain a great many patients who from extreme nervousness cannot be relied upon to keep absolutely still under a local anæsthetic, a point of no mean importance when a movement of the patient's head may cause disastrous results.

An objection that is commonly raised—and often not without cause—to the employment of general anæsthesia in ophthalmic surgery is that the anæsthetist is apt to hamper the movements of the operator by getting in the way, and by allowing his mask to encroach upon the field of operation, but with a little care and attention to detail on the part of the anæsthetist this can easily be avoided. Anæsthesia should, as a rule, be induced by means of gas and ether or ethyl chloride and ether and then continued by chloroform. When once chloroform narcosis has been established, the anæsthetist should move away from the head of the operating table and take up his position at the patient's side, where he will be out of the operator's way. He can in this position easily continue the administration by means of a Junker's inhaler. The masks which are ordinarily used with this and other chloroform inhalers reach up to the bridge of the nose and are consequently apt to obstruct the operator. To obviate this difficulty Messrs. Krohne and Sesemann have made for me a mask of a somewhat different shape, which just fits over the tip of the nose, and is thus, when in position, well away from the region of the eye. In many eye operations it is not necessary, after the patient has once been deeply anæsthetised, to continue the administration, but in cases for which longer anæsthesia is required I have found the method I have above described acts admirably. In the absence of such a small mask, a satisfactory type of anæsthesia can generally be maintained by means of a nasal tube.

CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

THE DEVELOPMENT OF LAMELLAR CATARACT.

BY

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The opportunity of watching the development of a lamellar cataract is so rare that this single observation is not without interest. The date of the appearance of such a cataract cannot, even now, be regarded as universally agreed upon.

Some authorities hold it to be a congenital, others to be an infantile disorder; a few years ago Mr. Norman Bennett contributed to the *Transactions* of the Ophthalmological Society, a valuable paper which had a great bearing on this disputed point. In it, he showed from a study of the permanent teeth, that the defects in their development which commonly co-exist with the defects in the lens, must be due to some disturbance suffered by the whole organism, during the early months of extra-uterine life, and that this disturbance was probably set up by malnutrition. It is at the very least, possible, bearing in mind the almost constant relationship of the dental defects to the lamellar cataract, that the changes in the lenses may be due to the same causes, and are therefore post-natal and not really congenital.

In support of this view we may recall to mind the history so often given by the parents who bring the little patient, that the child could see well up to a certain age, after which vision deteriorated. Lay evidence of this nature is a weak reed to lean upon, but from the nature of things the expert is not likely often to see such children before the vision fails, and therefore his evidence, which alone would carry much weight, is necessarily wanting.

The lay evidence, then, bad as it is, is all that we can expect in most cases; there is little direct expert testimony in favour of the post-natal date.

One case, however, has been recorded by de Wecker, and is familiar to all; it may briefly be repeated here. In August, 1866, he saw the niece of Dr. Martins; she was then aged 9 years. The left eye was said to be failing; examination showed a zonular cataract, having the peculiarity that the layer behind the clear nucleus was much more opaque than that lying in front of it; the opaque disc had a diameter of 4.5 mm. or 5 mm. At the request of Dr. Martins, De Wecker examined the right eye also, and can affirm that the eye then possessed a perfectly transparent lens. Ten months later, the child paid a second visit; the cataract in the left eye was more dense than before; it seemed as if the layers both in front and behind the lens were equally opaque throughout. To De Wecker's great astonishment, however, he found that the right lens, which had been perfectly transparent at the first occasion, now presented definite signs of lamellar cataract.

This case is almost unique in ophthalmological literature, and this is my excuse for bringing forward a single observation bearing on this point.

In 1900 I was consulted at the Royal Westminster Ophthalmic Hospital by the mother of William B., because she had noticed that his sight had seemed defective for some months,

and was still becoming worse. The boy was a well-developed, healthy child of three years, with no signs of rickets ; he had had one "fit" at the age of twelve months. He had suffered from none of the ordinary diseases of childhood.

On dilating his pupils with atropine, a good, almost normal, reflex was seen, but it was impossible to gain any view of the details of the fundus. The phrase "good reflex" is perhaps a little obscure ; what I wish to indicate is, that the appearances did not at first suggest any opacity of the media, but rather that the retinal vessels were absent and not merely invisible ; there were no obvious opacities of the lens. The child's vision was clearly defective ; he groped for small objects dropped on the floor, although he fixed a light perfectly : there was no nystagmus. Although no separate opacities could be seen in the lens, the inverted image from its posterior surface was not easy to see, and for this reason I felt sure that the lens was at fault ; the case was seen by several other surgeons, and opinion was somewhat divided on the proper course to pursue, since some regarded the case as one of mal-development of the vitreous. The catoptric test had convinced me that the lens was not perfectly normal, and feeling sure that at worst I should do little harm, I determined to remove one lens ; after several needlings, the lens being absorbed, I was able to obtain a clear view of a normal fundus. When the boy left the hospital, the remaining lens showed changes, so that it was possible to see some separate opacities therein.

I did not see the boy again until 1902, when he came unexpectedly ; his parents lived in the country and were not able to bring him to London often. His vision in the eye whose lens had been removed, was with + 10.0 D. 6/18 partly ; he said he could see more, and this was not improbable, as his education was not very far advanced.

The chief interest, however, was in the right eye which had not been subjected to any treatment ; the lens showed a well-marked typical zonular cataract ; the margins of the lens were fairly clear, allowing an incomplete but much better view of the fundus than had been possible in 1900 ; the centre was much more opaque. The appearances suggested that the opacities had collected from the whole lens and had localised themselves in the lamellar cataract.

There can be hardly any doubt that in this case the lamellar cataract was not congenital, but perhaps it was a second defect superimposed on a congenital malformation. The history given by the parents was so precise, that I have little doubt that the opacity of the lens first appeared when the vision of the child was noticed to fail. If the sight had been very defective from birth, it is unlikely that there would have been no nystagmus.

STAINING OF THE CONJUNCTIVA BY PROTARGOL.

BY

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I have had little personal experience in the use of protargol, but recently, within a few days of each other, two instances came under my observation, in which it had been prescribed by an ophthalmic surgeon in a Midland town, and in each the staining of the conjunctiva was very marked.

The first case was a young man, aged about 28 years. The protargol solution had been used, apparently for a nebula on each cornea, from February 8th, 1903, to November 30th, 1904, a period of twenty months. It was ascertained from the prescription paper that the protargol solution had been repeated time after time until November 30th, 1904, when it was discontinued and another application substituted for it. The strength of the solution was not, however, stated. The whole surface of the ocular conjunctiva was rendered a dark olive tint, but the discolouration was most evident on the inner surface of each lower eyelid, where the normal redness of the conjunctiva was replaced by almost a blackness.

The other patient was a married woman, aged about 30 years. The prescription paper was shown to me, but it did not state the strength of the protargol solution. The drops had, however, been used at first three times a day and later almost every night for a period approaching five years. I anticipate, however, that they were continued for this long time without direct medical sanction. At all events the paper in this instance did not show the constant repetition which the former one did. In this case, however, the discolouration produced by the protargol was as marked as it had been in the man, and, as in his case, it showed itself on the ocular conjunctiva, but particularly in the dark discolouration of the inner surface of the lower eyelid and lower cul-de-sac. A further point to note in each of these cases, but especially in the man, was the thickening of the conjunctiva, making each lower eyelid to appear somewhat full.

Many years have elapsed since I met with discolouration resulting from the use of nitrate of silver. At one time I did occasionally see instances, but I cannot recall any in which the staining was so decided as in the two cases now recorded. The onset of the discolouration in each of these cases must have been very gradual, as neither patient could specify the time when it had first been noticed. They had apparently become accustomed to the appearance, and it did not in either case occasion much concern.

These cases clearly indicate that protargol is a preparation of silver which needs care in its use. If employed for any length of time it should only be so when the patient can be kept under close observation, since it is probably as prone as the old silver nitrate to occasion staining of the conjunctiva.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I. —FOREIGN BODIES IN THE EYEBALL. ETC.

- (1) Seggel.—Double perforation of the walls of the eyeball by a foreign body. (Doppelte Perforation der Augapfelwandungen durch einen Fremdkörper.) *Klin. Monatsblätter f. Augenheilkunde*, 1903, Bd. II, p. 66.
- (2) Brandenburg, G.—Retention for nine years of a glass splinter in the anterior chamber of the eye. (Mitteilung eines Falles von neun Jahre langem Verweilen eines Glassplitters in der vorderen Augenkammer.) *Klin. Monatsbl. f. Augenheilk.*, 1903, II, p. 143.
- (3) Desjardins.—A case of wound in the region of the ciliary body by a fragment of iron. (Note sur un cas de blessure dans la région du corps ciliaire par un éclat de fer.) *Bull. et Mém. de la Soc. française d'Ophthalmologie*, 1904, p. 458.
- (4) Businelli, F.—On penetrating wounds of the human eye. (Sulle ferite penetranti nell'occhio umano.) *La Clinica Oculistica*, Maggio-Giugno, 1904.
- (5) Breckle, A. R.—Successful extraction of copper splinters from the eye. (Erfolgreiche Extraktion von Kupfersplintern aus dem Auge.) *Inaug.-Disser. Tübingen*, 1904, and *Woch. f. Therapie u. Hygiene des Auges*, 16 Februar, 1905.
- (6) Wicherkiewicz, B.—A contribution to our knowledge of the shifting of foreign bodies in the eye. (Beitrag zur Wanderung fremder Körper im Auge.) *Klin. Monatsbl. f. Augenheilkunde*, Dezember, 1904.
- (7) Rogman.—Upon the curability of siderosis of the eye, (Sur la curabilité de la sidérose de l'œil.) *Annales d'oculistique*, janvier, 1905, and *Bull. de la Société belge d'Ophthalmologie*, 1905, p. 14.

- (8) **Morax, V.**—Metallic foreign body lodged in the crystalline lens; extraction with the electro-magnet; cure without cataract. (*Corps étranger métallique du cristallin; extraction avec l'électro-aimant; guérison sans cataracte.*) *Annales d'oculistique*, février, 1905.
- (9) **Wirtz, R.**—Upon the tolerance of foreign bodies by the eye. (*Ueber Toleranz des Auges gegen eingedrungene Fremdkörper.*) *Inaug.-Dissertation*, Strassburg, 1904, and *Wochens. f. Ther. u. Hygiene des Auges*, 16 Februar, 1905.
- (10) **Buchanan, Leslie.**—Injuries to the eye by penetrating foreign bodies, and the results after magnet operations. *Lancet*, 14th January, 1905.
- (11) **Cassimatis, G.**—Observations upon foreign bodies in the eye. (*Considérations sur les corps étrangers de l'œil.*) *Archives d'ophtalmologie*, mars, 1905.
- (12) **Debève.**—A contribution to the study of foreign bodies in the orbit. (*Contribution à l'étude des corps étrangers de l'orbite.*) *Archives d'ophtalmologie*, mars, 1905.

(1) A soldier was wounded in the left eye by a particle of metal during shooting practice. The splinter had perforated the wall of the globe near the macula lutea, and thereby caused a small central scotoma. The injured eye subsequently took a divergent position, and double images of an unusual nature resulted. These led **Seggel** to infer a contraction of the superior oblique muscle through injury to the nerv. trochlearis in the superior orbital fissure. **A. BIRCH-HIRSCHFELD.**

(2) No pain or inflammation resulted from the penetration of the splinter, until three years after its entrance. **Brandenburg** believes symptoms then to have occurred from the working loose of the splinter and lesion of the corneal endothelium and ciliary processes, not only from chemical action. The piece of glass was removed, and was found to have smooth, sharp edges. It measured $2\frac{3}{4}$ mm. by $1\frac{3}{4}$ mm.; and weighed 0.8 mgr.

(3) **Desjardins**, of Montreal, removed by iridectomy, a fragment of metal embedded in the iris of a child, aged five years. Twenty years after the operation, the wounded eye gave some little trouble, and upon examination showed a kind of pustule, mistaken for a phlyctenular efflorescence, near the spot where the iridectomy had been practised. Ordinary treatment having proved unsuccessful, Desjardins scraped away the pustule, and to his great surprise found a fragment of iron embedded in the mass. The piece of metal measured 3mm. by 2mm. by 0.5mm. The eye made a good recovery, with $V. = \frac{1}{2}$. **S. S.**

(4) In the course of a clinical lecture upon penetrating wounds of the eye, **Businelli** urges that it may be possible, to avoid the extreme measure of enucleating the eye when the foreign body is visible or when its point of entrance is clearly denoted. He has himself succeeded on four occasions in extracting metallic splinters from the anterior chamber, even although they had entered the iris or the ciliary body. Enucleation, however, is necessary when the injury is not recent, and when the foreign body is setting up pathological changes, and, above all, when the other eye shows signs of sympathy. In illustration of his remarks, **Businelli** relates the case of a patient who was wounded in the eye by small shot fired from a distance of forty paces. Almost immediately after the accident, the patient knelt down by a brook, and bending his head over the water, rubbed the blood from his face with a pocket handkerchief. Upon examination, a circular wound, 2 mm. in diameter, was found both in the eyebrow and in the sclero-corneal junction. There was blood in the anterior chamber; the pupil was dilated; there was no reflex from the fundus; and sight was equal to perception of light. The wounded eye was cleansed and bandaged, and in five days the blood had been resorbed, and vision had become practically normal.

ANNIE T. BARNARD.

(5) In the material of the *Tübingen Klinik* wounds of the eye by copper splinters are met with. Indeed, amongst the cases of blindness observed at the institution in question those due to injuries by copper formed 1 per cent. in the 4·4 per cent. of eyes blinded by traumatism. Among the 44 patients blinded by percussion caps, 42 belonged to the male and 2 to the female sex. Twelve cases occurred in the first decade of life; twenty in the second; nine in the third; and one each in the fifth and sixth decade. Of the 44 wounded eyes 26 were enucleated, operation was refused in 11, and in 7 the piece of metal was removed. **Breckle** goes into detail with regard to the histories of the last-named cases. From the Tübingen experiences it appears that the prognosis of penetrating wounds of the eye by pieces of copper is not so unfavourable as generally assumed. An attempt at extraction by a meridional incision in the sclera is justified even in the presence of suppuration, inasmuch as no harm can accrue, and in case of failure enucleation of the eye is still possible.

MAX P.

(7) **Rogman** reports a case where siderosis of the iris and lens was present, and yet, after several operations, relatively good sight was obtained. The main facts follow: a man, aged 36 years, had been wounded in one eye by a particle of iron in

the year 1892. Although the foreign body was not removed, sight became good, and the eye remained free from inflammation for a period of nine years. In 1903—that is, eleven years after the injury—Rogman had an opportunity of examining the eye. He found a cataract of brownish colour, and a rusty-coloured iris. The lower-internal edge of the iris was fastened to the lens, and a prominent nodule was observed in the neighbourhood of the synechia. Examination with the sideroscope showed that a fragment of iron was present, probably at the spot where the nodule was situated. An iridectomy brought to light a metallic particle on the crystalline lens, and the fragment was readily taken away by introducing the point of Hirschberg's magnet into the anterior chamber. The fragment weighed two centigrammes. After extraction of the lens and incision of a secondary cataract, sight became equal to 5/10. The fundus of the eye was normal. The iris of the injured eye lost its rust colour, and eventually took on an ashen hue. Perls' Berlin blue reaction yielded a positive result, thus showing iron to be actually present in the crystalline lens. S. S.

(8) A man, aged 20 years, was struck in the eye by a fragment of steel, about 0.5 mm. in size. When examined twenty-four hours after the accident by **Morax**, no external changes were visible, but vision was 5/12,* and upon focal illumination a small corneal wound was found, and at a corresponding spot in the anterior capsule of the lens lay a small opaque stripe. The lens was transparent. Upon closer examination, however, a metallic reflection was obtained from the depths of that structure. By means of the conical pole of Volkmann's electro-magnet, held 1 mm. from the cornea, the foreign body was drawn against the anterior capsule, and, after several attempts, into the anterior chamber, whence it was extracted, after incision of the cornea, by the aid of Hirschberg's magnet. Nine months after the accident, the crystalline lens was transparent, and the visual acuity was normal.* S. S.

(9) **Wirtz** describes three cases recently met with in the Strassburg *Universitäts-Augenklinik* in which a foreign body was present in the eye without causing symptoms of inflammation or interference with sight. In two of the cases the body was a piece of iron or steel, and in the third case a shot-corn. To these Wirtz adds thirty-four cases collected from literature in which the eye had tolerated splinters of iron or steel with the retention of more or less good vision. Moreover, he adds thirteen similar cases where copper was embedded, as well as four where lead was concerned,

* A case somewhat similar to that described by Morax has been placed upon record by **Sacher** (*Zeitschr. f. Augenheilkunde*, 1901, p. 290).

and, finally, a case where glass and another where wood was the intruding substance. The tolerance of an eye towards a foreign body depends upon several points—as, for example, the size of the substance, its state as to asepticity or otherwise, and its chemical action. Lead is, however, the least, and copper the most dangerous. In the collected cases tolerance was observed in six instances to extend over half a year, in five over a year, in five over two years, in three over three years, in one over five years, in two over six and seven years respectively, in one eight years, in three over ten years, and in one over twenty-eight years. In eleven of these cases sight remained normal, and all retained more or less useful power of vision. Other factors concerned in the tolerance of foreign bodies are encapsulation and position, although the former is not always able to protect the eye from further inflammation. With regard to the cause or causes of encapsulation, nothing can be stated with certainty. But, according to the figures adduced, copper seldom becomes encapsulated. The position of the foreign particle has something to do with its encapsulation. Figures confirm the experimental observation that splinters of iron become encapsulated more speedily when lodged in the tunics of the eye than when they lie in the vitreous. A deleterious chemical action is exercised by pieces of copper when the latter are situated in vascular parts of the eye, whereas in the vitreous this influence is less pronounced. The precise action of leaden particles has not yet been determined clearly. The prognosis, which depends upon the size, the nature, the location, and the encapsulation of the splinter, should be carefully made, on account of the danger which may threaten the eye sooner or later. Finally, a definite decision as to the tolerance of foreign bodies by the eye cannot yet be reached from the material at hand. MAX P.

(10) **Buchanan** reports three cases in which useful vision was regained after the removal from the eye by the electro-magnet, of metallic fragments of considerable size.

(12) **Debève** reports a couple of cases in which, unsuspected by patient or practitioner, a foreign body lay in the orbit. In the first instance this was a piece of a horse's hoof, 25mm. by 15mm. by 5mm., and in the second a semi-circular piece of steel from a gun, 22mm. by 4mm. by 2mm.

II.—AFFECTIONS OF THE LACRYMAL APPARATUS.

- (1) **Mouzens.**—A clinical study of the ocular complications of dacryocystitis. (*Étude clinique des complications oculaires des dacryocystites.*) *Thèse de Bordeaux*, 1903.
- (1A) **De Lapersonne and Rochon-Duvigneaud.**—The surgical treatment of diseases of the lacrymal passages. *Congrès de Madrid*, 1903.
- (2) **Roy, Dunbar.**—Case of spontaneous prolapse of both lacrymal glands. *Trans. American Ophthal. Society*, Vol. X (1903), p. 179.
- (3) **Bérard.**—On the abuse of probes in simple dacryocystitis. (*De l'abus du cathétérisme dans les dacryocystites simples.*) *Bull. et Mém. de la Soc. française d'Ophthal.*, 1904, p. 219, and *La Clinique Ophthal.*, 10 juillet, 1904, and *L'Ophthalmologie Provinciale*, juillet, 1904.
- (4) **Suker, George F.**—A criticism on the use and abuse of the lachrymal probe. *American Journal of Ophthalmology*, September, 1904.
- (5) **Lotin, A. W.**—Electrolysis in disease of the lacrymal ducts. *Russki Vrach*, May 29, 1904, and *American Medicine*, November 5th, 1904.
- (6) **Murat.**—Imperforation and contraction of the lacrymal passages in infants. (*De l'imperforation et du rétrécissement des voies lacrymales chez les enfants en bas âge.*) *Thèse de Bordeaux*, 1903, and *Rev. générale d'ophtalmologie*, 30 novembre, 1904.
- (7) **Doyme, R. W.**—Peculiar condition of the lacrymal sac following injury. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 7.
- (8) **Wharton, John.**—A case of unilateral dacryoadenitis simulating sarcoma. *Lancet*, 1st October, 1904.
- (9) **Buckwalter, J. C.**—Hæmorrhage from lacrymal duct following removal of style. *American Journal of Ophthalmology*, October, 1904.
- (10) **Snell, Albert C.**—Acute dacryoadenitis. *Ophthalmology*, October, 1904, p. 36.
- (11) **Mazet.**—Upon a case of spontaneous displacement, or ptosis of the lacrymal gland. (*Sur un cas de déplacement spontané, ou ptose de la glande lacrymale.*) *Bull. et Mém. de la Société française d'Ophthal.*, 1904.

- (12) **Rollet, E.**—**Giant ectasia of the lacrymal sac.** (*L'ectasie géante du sac lacrymal.*) *Bull. et Mém. de la Société française d'Ophthal.*, 1904.

(1) In certain indeterminate conditions, the most often after probing, dacryocystitis may be followed by several complications affecting the orbit or even the eye. Moreover, these accidents are extremely rare. For example, Badal, amongst more than five thousand patients treated at the ophthalmological *clinique* of Bordeaux, or in his private practice, has met with five cases only. The most common accident is abscess of the orbit, usually succeeded by atrophy of the optic nerve. **Ischæmia** of the papilla may come about almost in a fulminating way and be followed by complete and incurable atrophy. The other complications, named in their order of frequency, are : choked disc, which recovers or leaves the papilla in a more or less atrophic condition ; neuro-paralytic keratitis, which may lead to ulceration and perforation, and be accompanied by iritis and irido-cyclitis ; motor paralysis due to compression of the nervous filaments or to true myositis. The walls of the orbit may be involved (periostitis, ethmoidal sinusitis). Under these circumstances the infectious processes may gain the meninges. A single case of death appears to be the only one reported up to the present, but the prognosis is always grave as regards the visual function. The least exophthalmos following any interference whatever with the lacrymal passages should at once put the surgeon on his guard. A large opening into the sac and disinfection of the last-named, or better its destruction with the cautery (thermo- or galvano-) should be resorted to forthwith.

A. DARIER.

(1A) In certain specified chronic forms of disease, **De Laper-sonne** and **Rochon-Duvigneaud** recommend the following lines of treatment. (1). *In simple lacrymation without regurgitation.* Before resorting to surgical means, all diagnostic measures must be taken in order to ascertain the cause of the lacrymation. Then and then only is one justified in touching the lacrymal passages. Incision of the lower punctum lacrymale, and the passage of Bowman's probes (No. 2 or No. 3), followed or not by antiseptic injections. The probe should not be used with a view to dilating the nasal duct ; one should generally keep to the same sized instrument, and be careful to avoid making the mucous membrane bleed. In the inveterate cases, electrolysis may render service, if applied prudently. But this is not merely a question of milliampères, inasmuch as the resistance of the mucous membrane varies much. (2). *Lacrymation associated with the regurgitation of mucous or muco-*

purulent fluid, and chronic blepharitis, but without obvious distension of the lacrymal sac. Stilling's operation, excellent for disinfecting the lacrymal passages, may be followed by a dilatation of the stricture in the nasal duct. The passage of large probes, therefore, must sometimes be resorted to. (3). *Distension of the lacrymal sac.* In such cases where there have been acute attacks, but nothing remains beyond some adhesions with the skin or, it may be, a fistula without polypi. In these cases the authors recommend extirpation of the sac, which is even more definitely indicated when there exists a mucocele or a cystic or a precystic pouch. (4). *In lacrymal fistulæ associated with polypi, extensive adhesions, or osseous lesions,* the writers advise destruction of the sac by cauterisation. In the acute forms of disease, such as abscess of the sac, the authors recommend an incision opening the sac widely and including the tendon of the orbicularis. The writers point out that lacrymation is more often the result of a reflex hypersecretion of the glands set up by persistent inflammation of the lacrymal passages than of a definitive obliteration of the channels. Removal of the palpebral lacrymal glands should be undertaken only when every other means of treatment has failed.

A. DARIER.

(2) A coloured woman, 27 years of age, complained that since an attack of bronchitis three weeks before she consulted **Roy**, both upper eyelids had been swollen. There was no pain. Upon palpation of the œdematous upper lids, Roy found a well-defined body just beneath the border of the outer edge of each orbital ridge. The body was freely movable, and could be pushed beneath the bone. There were no enlarged glands elsewhere. No history of traumatism.

(3) **Bérard**, of Angoulême, abandons probing in cases of simple dacryocystitis as soon as the nasal duct readily admits of the passage of Bowman's No. 3 sound.

H. de V.

(4) **Suker** condemns the use of large probes on the following grounds: they produce undue pain; they tend to destroy the lining of the canal; and they are apt to give rise to strictures, or, on the other hand, to make the canal unduly large—thus increasing the liability to infection from the nose; they also necessitate undue slitting of the canaliculus, and produce hæmorrhage, the clot being liable to organise and to form new strictures.

F. W. MARLOW.

(5) **Lotin** employs electrolysis in the treatment of lacrymal disorders and claims good results. This method achieves a

much more rapid cure of stricture of the duct than dilation with sounds and irrigations. The sittings are less frequent, once a week being usually sufficient, and this offers an advantage to many patients. The dilation by means of electrolysis is, moreover, permanent and less liable to relapse. Indeed, certain extreme cases are beyond sound treatment, and it is for them that electrolysis offers an excellent chance of cure. The use of the negative pole in the strength of 4 ma. to 5 ma., lasting five minutes, is absolutely safe. Speaking of indications, the author recommends electrolysis especially in strictures of high degree, simple and complicated with catarrhal or blenorrhagic dacryocystitis. The method is also well worthy of trial in fistula of the lacrymal sac.

(6) For the most part congenital, these affections, according to **Murat**, affect by preference the end of the nasal duct under the form of fibro-mucous diaphragms, more or less complete. The cardinal symptoms are lacrymation, swelling, and dacryocystitis, in cases of superadded infection. Massage and probing often suffice for the cure. Impermeability of the puncta or excessive stenosis calls for incision; lacrymal fistula need the thermo-cautery and catheterism of the normal passages. Syphilitic and tuberculous tumours are benefited by extirpation and by general treatment. In the last resort against rebellious epiphora, ablation of the palpebral gland is indispensable.

P. CHAVERNAC.

(7) **Doyme's patient**, a lad *àtât* 15 years, was struck with some violence in the eye. A week later a lump developed, roughly occupying the position of the lacrymal sac, and upon firm pressure over this swelling, blood passed from the puncta lacrymalia into the conjunctival sinuses. Some three months after the injury, the condition was as under: "A soft elastic, tender lump, the size of a filbert, occupies the position of the left lacrymal sac, behind the tendo oculi. Upon steady pressure it disappears like a hernia, but without regurgitation of fluid either into the conjunctival sac or into the nose. When the swelling has been emptied of its fluid contents, a hole, into which the tip of the finger can be placed, is felt in the region of the lacrymal bone, which appears to have become absorbed. No discharge from nostril. No changes can be found in the nasal cavity."

(8) An unfortunate and misleading case in which the contents of one orbital cavity were removed under the impression that the patient, a woman of 21 years, was suffering from sarcoma of the lacrymal gland. An exploratory incision led to the

discovery of no pus. Pathological examination, however, showed that the lesion was in the nature of subacute dacryoadenitis. Out of 28,000 in-patients at the Manchester Royal Eye Hospital during the last 21 years, there have been 34 cases of orbital tumour, and of these 3 were cases of tumour of the lacrymal gland.

(9) In order to remove a silver style, which had been lodged in the nasal duct for about six years, **Buckwalter** sawed through the anterior end of the inferior turbinate bone. During the first few hours after the operation it is estimated that the patient lost at least $4\frac{1}{2}$ quarts of blood.

(10) **A. C. Snell** reports two cases of acute inflammation of the lacrymal gland, neither associated with mumps. The abscess broke spontaneously in one patient, an elderly woman, who had recently been subject to recurrent attacks of styes. She made a good recovery. In the other patient, a girl 14 years old, the inflammation came on during convalescence from influenza, and there also the pus found a spontaneous exit. Recovery was complete. With regard to treatment, cold compresses are recommended in the earlier and hot fomentations in the later stages. Snell is of opinion that the condition rarely calls for incision, since the pus usually points through the conjunctiva, where a fistula can do no possible harm. The communication concludes with an analysis of 129 instances of acute dacryoadenitis collected from literature.

(11) A woman, aged 32 years, presented a small swelling towards the outer part of the upper lid of the right eye. The swelling took the form of a pedunculated tumour, suspended in a cutaneous fold of the upper eyelid, which surrounded it like a sac. The mass could be readily reduced into the lacrymal fossa, but it soon slipped into its original position when the pressure of the finger was relaxed, especially if the patient held the head downwards. A small scar over the outer end of the eyebrow represented a wound at three years of age, this, **Mazet** surmises, may have played some part in producing prolapse of the gland. At the same time this could scarcely have accounted for the condition of the left lacrymal gland, which manifested some slight signs of impending prolapse. The right gland was removed surgically with excellent results. It manifested no abnormal appearances either as regards shape or size.

H. de V.

(12) **Rollet** describes, in a woman of 67 years, one of those rare instances where the lacrymal sac becomes enormously distended. In this particular case the region of the sac was occupied by a

tumour as big as a walnut, extending from the inner end of the eyebrow to the outer third of the lower eyelid. Upon pressure, fetid pus escaped from the fistula present and also from the nose. The eye had watered for four years; and a tumour had existed for two years. Rollet evacuated part of the contents of the sac through the fistula, and afterwards injected paraffin through the aperture. He then removed the distended sac *en bloc*. Pneumococci, in addition to unidentified bacilli, were found in the pus. The sac, examined immediately after its removal, measured 36 mm. in height, 18 mm. in width, and 28 mm. in the antero-posterior direction. S. S.

III.—PEMPHIGUS OF THE CONJUNCTIVA.

- (1) **Salva.**—**Pemphigus of the Conjunctiva.** (**Pemphigus de la conjonctive.**) *Dauphiné médical*, novembre, 1903, and *Revue générale d'ophtalmologie*, juin, 1904, and *La Clinique Ophthal.*, 25 juillet and 10 août, 1904.
- (1A) **Dartigalongue.**—**A contribution to the study of ocular pemphigus.** (**Contribution à l'étude du pemphigus oculaire.**) *Thèse de Bordeaux*, 1903.
- (2) **Johnston, Richard H.**—**Pemphigus (?) of the respiratory tract with conjunctival lesions.** *Journal of Eye, Ear, and Throat Diseases*, May-June, 1904.
- (3) **Brown, S. H.**—**Pemphigus of the conjunctiva, with report of a case.** *Annals of Ophthalmology*, July, 1904.
- (4) **Anderson, William.**—**Pemphigus of the conjunctiva of both eyes.** *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 19.
- (5) **Nettleship, E.**—**Case of pemphigus affecting the skin and conjunctiva, and some other mucous membranes.** *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 22.
- (6) **Coppez, H.**—**A case of pemphigus of the conjunctiva associated with particular lesions of the cornea.** (**Un cas de pemphigus de la conjonctive avec lésions cornéennes spéciales.**) *Bull. de la Soc. belge d'Ophtalmologie*, No. 17, 1905.

(1) **Salva** reports a case of pemphigus of the conjunctiva which had commenced in 1900 in a woman of 63 years. The pemphigus affected first the eyes, next the bucco-pharyngeal cavity, and, lastly, the skin of the face and limbs. In fact, the pemphigus became generalised. To begin with, there formed upon the conjunctiva rounded and insignificant

ulcerations, which stained readily with methylene blue or fluorescein. Bullæ were never observed. The author, however, thinks that the ulcerations resulted from quickly rupturing bullæ. In consequence of the lesions, the *culs-de-sac* got smaller and smaller; cicatricial bands were produced, leading finally to symblepharon and trichiasis. The cornea became ulcerated, and were speedily covered with pannus crassus. Blindness was complete towards the end of 1902. None of the treatment tried had any result on the disease.

(1A) **Dartigalongue's** conclusions are as under: Pemphigus of the eye is an affection of all ages, attacking men as well as women, and having an evolution at once progressive and fatal. It may or may not be accompanied by bullæ upon the cornea and conjunctiva. In most cases bullous eruptions are observed upon other mucous membranes or upon the skin. The contents of the bullæ may be clear, purulent, or hæmorrhagic. The disease is to be attributed to a lesion as yet unknown. The progressive march of the disease cannot be influenced by any means, medical or surgical, at present known to science. The treatment, then, is limited to a treatment of the complications.

A. DARIER.

(2) **Johnston's** patient, a married woman, aged 53 years, complained of discomfort in one eye shortly after she had experienced a severe nervous shock. When first seen, adhesions existed between the lower lid and the eyeball; the conjunctiva looked dry; the cornea was clear; and the lens was cataractous. Round or oval patches, which could be lifted with a probe, were present on the soft palate, pharynx, and epiglottis; the soft palate was adherent on both sides to the pharynx. No suspicion of syphilis. Mercury and potassium iodide led to no improvement, although continued for three months. The faucial lesions disappeared gradually, leaving superficial cicatrices, and were replaced by others of the same character. Under Fowler's solution the throat improved, but the eye went from bad to worse. The conjunctiva was replaced by a hard, leathery, dry, tissue, the upper and lower lid got adherent to the eyeball, and the cornea became cloudy and showed signs of ulceration. Cultures from the faucial lesions were made several times, and on each occasion a diplococcus, apparently identical with that obtained by Demme from acute pemphigus and by Dähnhardt from chronic pemphigus, was isolated. The micro-organism in question stained by Gram's method, and grew freely on agar. It liquefied gelatine, formed a white film on potato, curdled milk, and rendered bouillon acid. Injected into guinea-pigs and mice, it caused death in four to eight days, and the cocci could be obtained from the blood of animals dead of the infection.

(3) A woman, 48 years of age, sought advice from **Brown** for what appeared to be acute catarrhal conjunctivitis and hæmorrhage from the nose and vagina. The conjunctivitis readily responded to treatment "but was followed by some encroachment upon the fornix." About a year later, the epistaxis became worse, and the conjunctivitis recurred. Examination at this time showed blebs scattered over the surface of the body and mucous membrane of the mouth. Recently-ruptured blebs were found in the conjunctival sac, the sinuses of which speedily became contracted. Blebs were seen upon the corneæ. The patient got very ill, large crops of blebs continued to make their appearance, the corneæ became ulcerated, and treatment was of no avail. The woman eventually died, six months after the first well-marked eruption of bullæ.

(4) A woman, 29 years of age, suffered from acute pemphigus foliaceus or from epidermolysis bullosa in August, 1903, associated with conjunctival and faucial manifestations. When seen in the following November by **Anderson**, her condition was as under: the skin was covered with patches of pigmentation, the mucous membrane of the mouth was scarred, and the conjunctival sacs were more or less obliterated. An elastic swelling lay above the outer canthus of one eye, and was thought to be "due to retention of tears"; while in one lower *cul-de-sac* were a row of deeply-seated bluish vesicles about the size of a small pea. No bacteriological examination was made.

(5) A boy of 8 years presented symmetrical scarring of all four eyelids. Six months before he was seen by **Nettleship** there had been a bullous eruption affecting the skin and the mucous membrane of the mouth, fauces, rectum, and eyes. No relapse during the next four years.

(6) **Coppez's** patient, a young woman, aged 28 years, suffered from pemphigus of the conjunctiva, cheek, gums, and vulva. The disease of the conjunctiva had led to a medium symblepharon of the lower eyelids. The lower two-thirds of each cornea had little by little become opaque, and the author surmises that the opacities may eventually attack the entire corneæ. S. S.

IV.—RETINITIS CIRCINATA.

- (1) **Bossalino, Domenico.**—A case of retinitis circinata. (Un caso di retinite circinnata.) *La Clinica Oculistica*, Marzo, 1904.

- (2) **Troncoso.**—A case of retinitis circinata. (Un caso de retinitis circinata, atèroma de los vasos retinianos e incrustacion de sales en la retina.) *Anales de Oftalmologia*, June, 1904.
- (3) **Doyne, R. W. and Stephenson, Sydney.**—Retinitis circinata. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 91.
- (4) **Demichieri.**—A case of retinitis circinata. (Retinitis circinata.) *Arch. de Ophthalm. Hisp.-Americanos*, November, 1904.

(1) **Bossalino** sums up the results of Amman's pathological examination of an eye affected with retinitis circinata (*Arch. f. Aug.*, Vol. XXXV, p. 123), and then goes on to describe an instance of the disease met with in a man, aged 72 years. Arterio-sclerosis was present, but otherwise the patient was healthy, although he drank and smoked freely. In one eye there was typical retinitis circinata, with a large absolute central scotoma, while in the other eye was a central scotoma for red and for green, but no retinitis. A diagnosis was made of bilateral toxic amblyopia, associated with retinitis circinata in one eye only. Under treatment the toxic condition quickly receded, but vision, of course, did not improve in the eye with retinitis. Considerable stress is laid by Bossalino upon the connection between arterio-sclerosis, on the one hand, and retinitis circinata, on the other. The author agrees with the view that the retinitis advances step by step with exacerbations of the arterial affection. ANNIE T. BARNARD.

(2) **Troncoso's** case is of interest, because he had the opportunity of observing the development of the lesion in one eye, and in this way discovering something about the origin of the disease. The patient had noticed a failure of vision for the past two years without any pain or sign of inflammation in the eye. Her arteries were rigid and clearly atheromatous. The right eye showed a more advanced stage of the disease. The lower artery was in great part converted into white bands, and the macular region was occupied by a large depressed area where the choroid was absent through atrophy; the fundus was thickly sown with small white points, irregularly distributed. Between disc and macula were a few small hæmorrhages. In the left eye the disease was in a comparatively early stage, and vision was $\frac{2}{3}$ with correction. The upper temporal artery was atheromatous, and showed signs of perivasculitis; the other vessels were normal. Just outside the disc was an area covered by small, whitish-yellow dots, between which the

normal red fundus colour was still visible. A little external to and above this area was another patch. While the patient was under observation, great changes took place in the fundus and many new patches appeared. Some of these were preceded by hæmorrhages, but in most there was no preceding lesion, and the white patch appeared in a previously normal area. This case is therefore of importance, because it bears on the question of the origin of the disease; it is shown that it is not, as some ophthalmologists have stated, a form of hæmorrhagic retinitis, but a special degeneration of the retina complicated by disease of the vessels, which has probably the same primal cause.

HAROLD GRIMSDALE.

(3) **Doyne and Stephenson** report an instance of retinitis circinata which they observed in a woman, 77 years of age. The failure of sight had been ushered in by micropsia. R. V. = fingers; L. V. = $\frac{2}{20}$. The right fundus showed the changes typical of advanced retinitis circinata, while in the left fundus the changes were much less pronounced. There were no evidences of arterial high tension. The urine contained neither albumen nor sugar. The communication is accompanied by two coloured plates showing the ophthalmoscopic appearances.

(4) **Demicheri's** case was unusual in showing three rings of degenerated patches and no macular changes. Central vision was good.

HAROLD GRIMSDALE.

V.—FUNDUS CHANGES IN THE INSANE.

- (1) **Kuhnt and Wokenius.**—Changes in the fundus oculi in the insane. *Zeitschr. f. Augenheilkunde*, Februar, 1903, and *Annals of Ophthalmology*, July, 1903.
- (2) **Pilcz, A. and Wintersteiner, H.**—On the results of ophthalmoscopic examination of the insane, with especial reference to congenital anomalies. (Ueber Ergebnisse von Augenspiegeluntersuchungen an Geisteskranken mit besonderer Berücksichtigung der kongenitalen Anomalien.) *Zeitschrift für Augenheilkunde*, Dezember, 1904.

Despite Sir William Gowers' dictum* that "the ophthalmoscopic appearances in the insane seem, for some reason, to be a favourite subject for observers whose experience of normal eyes is insufficient to enable them to estimate the significance of the

**Manual and Atlas of Medical Ophthalmoscopy*. Fourth Edition, 1904, p. 194.

appearance seen," yet the two following abstracts are based upon the work of men whose ophthalmoscopic competence can scarcely be challenged.

(1) **Kuhnt and Wokenius** examined five hundred and eleven individuals and of these one hundred and forty-three showed changes in the eye grounds. Four times pronounced atrophy, once choked disc, four times neuro-retinitis, eleven times marked hyperemia, twelve times marked pallor of the nerve without any further evidences of atrophy, seventeen times marked pallor of the temporal half of the disc, four times retinal hæmorrhages, once retinitis punctata albicans, three times connective tissue changes in the retina, twenty-seven times Uhthoff-Klein cloudings in the retina, thirty-four times disc-shaped cloudings in the macular region, forty-two times foveal changes, three times central choroido-retinitis, fourteen times central choroiditis, thirteen times central myopic choroiditis, three times glaucoma simplex. As regards the special changes in the central part of the retina we have two categories, first where there is a marked clouding of the retina of the entire macula lutea, and second where there were distinct round reddish yellow spots which surrounded and took in the fovea. It was interesting to note whether this spot in its development and character bore any relation to certain forms of mental disease. It was observed nineteen times in paranoia and dementia, twice in paralytic dementia, twice in periodic dementia, once in senile dementia, seven times in mental disturbances associated with epilepsy, twice with melancholia, four times in mania, twice in imbeciles, and once in idiocy. In all the cases the urinary examination was negative. In all the cases where there was disc-shaped clouding of the macular region and the yellow spot at the fovea, only one case showed anatomical changes in the papilla, and that was in a paralytic with well advanced optic nerve atrophy. There was never noted in the periphery of the eyeground anything which could be attributed to the mental diseases. Scotomata, as a rule, were absent; and the visual activity, as a rule, was unaffected to any great degree. The work at least suggests the importance of examining the macular region and fovea of individuals affected in this way.

(2) **Pilcz and Wintersteiner** examined 707 cases of various kinds of insanity with the ophthalmoscope, and the number of instances of congenital anomalies was truly remarkable. They quote long tables giving numbers and percentages.

A. LEVY.

VI.—ASTHENIC (BULBAR) PARALYSIS.

- (1) Lodato, G.—A contribution to the discussion of Erb's disease, with particular reference to the ocular symptoms. (Contributo alla casuistica della malattia de Erb, con speciale riguardo al sintomi oculari.) *Archivio di Ottalmologia*, Vol. XI, Fasc. 5-6, November-December, 1903.
- (2) Taylor, James.—Myasthenia gravis. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 337.
- (3) Lawford, J. B.—A case of myasthenia gravis. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 333.
- (4) Loeser.—On the combination of myasthenia and Basedow's disease, with remarks on the ocular symptoms of myasthenia. (Ueber das kombinierte Vorkommen von Myasthenie und Basedowscher Krankheit nebst Bemerkungen über die okularen Symptome des Myasthenie.) *Zeitschr. für Augenheilk.*, August, 1904.

(1) Dealing with a typical case of Erb's syndrome (myasthenia gravis pseudo-paralytica of Jolly) which he had thoroughly and continuously studied for several months, Lodato reports the distinctly traumatic origin of the affection of his patient and the ocular symptomatology of its commencement. The asthenia of the muscles of mastication, larynx, thorax, and limbs, etc., etc., made its appearance quite three months after the paresis or paralysis of the different ocular muscles (elevator of the eyelid, orbicularis, extrinsic muscles, pupillary sphincter, and ciliary muscle). At first there was only slight ptosis, insufficiency of the orbicularis, diplopia, and nystagmus during certain movements of the eye and paresis of the intra-ocular muscles, as shown by the rapid intermittency of the reflex contraction of the pupil, with hippus, and by accommodative asthenopia. In discussing his case, with considerable detail and numerous quotations which show a complete knowledge of the literature, Lodato points out the possible association, more or less complete, of Erb's syndrome with that of Basedow. In such cases likewise it is often the oculist who is first called upon to examine the patient. The difficulty of the diagnosis may be considerable in the incipient stages. In addition to the pains there are acute polyencephalitis, vomiting, vertigo, etc. which differentiate the latter from Erb's disease; does not present any ptosis, and, on the other hand, frequently exhibits rigidity of the pupils. The chronic forms of polyencephalitis of slow development may give rise to total extrinsic ophthalmoplegia, without ptosis, and to pupillary troubles or disturbances of the accommodation. An

historic case of chronic polyencephalomyelitis is that of the poet Heine, who succumbed to it at the end of twenty years. The disease commenced, as Mauthner describes it, with mydriasis and paralysis of the accommodation, and later extrinsic ophthalmoplegia and ptosis made their appearance, together with disturbances in the region of the fifth nerve.

A. ANTONELLI.

(2) A man, aged 46 years, had suffered intermittently from ptosis for ten years and from diplopia for nine years. These symptoms were accompanied by weakness of arms and legs and by inability to read for long together. Taylor's patient presented, furthermore, paralysis of ocular movements, difficulty in mastication, and myasthenic reaction in the affected muscles.

(3) Lawford's patient, a man aged 51 years, enjoyed good health until fourteen years ago, when after an attack of influenza, he observed that his lids began to droop, a symptom that gradually became more marked. At the same time he suffered from weakness of his legs. Upon examination, almost complete ptosis, movements of eyes extremely limited, pupils equal and active, media clear, fundi normal, and vision (corrected) = $\frac{6}{17}$. Other symptoms included loss of tone in the muscles supplied by the seventh nerve, defective elevation of soft palate, nasal speech, regurgitation of fluid on attempting to swallow, flabbiness and weakness of muscles of arms, legs, abdomen, and back. Conjunctival reflex dull, but knee-jerk and palatal reflex present.

(4) Loeser recounts two cases of this combination of nervous diseases. The first case, that of a woman, aged 21, had suffered about a year ago from a transitory ptosis, which lasted 8 days and disappeared spontaneously. She came now with a left ptosis without any attendant symptoms. The ptosis is of a myasthenic type. The lid can be raised in the morning, but rapidly tires. A week later divergences set in and the right lid became similarly affected and later on other muscles of the body showed the same reaction at the same time. The eyes became prominent. Graefe's symptom developed. Patient became nervous and the pulse small and rapid. The second case, also a woman, age 35, has suffered from exophthalmic goitre for several years. Within the last year ptosis and myasthenic symptoms had appeared in other muscles of the body. The author states that the principal ocular symptoms of myasthenia are uni- or bi-lateral ptosis, accompanied very frequently by paralyses of the external ocular muscles, while the internal muscles always escape. Very frequently also the orbicular is involved. Occasionally irritative symptoms are seen, such as tremors of the

lids and nictitations. The eye grounds have always been found normal. The paralyses of the various muscles are, of course, of a myasthenic type—that is to say, they react well or fairly well at first but rapidly become fatigued and refuse to act at all. This is seen equally whether the muscles are caused to contract voluntarily or by means of an electric current. A. LEVY.

VI.—MISCELLANEOUS.

Hall, W. Hamilton.—On the education of visual centres. *Lancet*, July 23rd, 1904.

Dunn, H. Percy.—On infective cyclitis (so-called sympathetic ophthalmia). *Lancet*, August 13th, 1904.

An interesting and ably-written lecture in the course of which **Dunn** insists upon the modern rarity of "infective cyclitis," and points to the fact that two cases only have fallen under his notice during the last nineteen years at the West London Hospital. The infrequency of the disease he traces to the general adoption of the principles of Listerism in dealing with wounded eyes. The author lays considerable stress upon the infective nature of the disease, and attaches importance to the free use of chinosol (1: 4,000) during operations upon the eye.

Snell, Simeon.—An epidemic of acute ophthalmia. *Lancet*, August 13th, 1904.

Snell reports the facts of an epidemic of acute muco-purulent ophthalmia amongst the population of Staveley, a Derbyshire township of about 12,000 inhabitants. Children of school age were mainly affected. **Snell** estimates that some 200 persons contracted the disorder, but in no case was the cornea affected. The Koch-Weeks' bacillus was found in discharge from the eyes of a woman, from the same district, who was suffering from the disease. The outbreak speedily yielded to the measures usual under such circumstances, namely, segregation, cleanliness, medical treatment, and attention to the washing arrangements.

Kauffmann.—An ophthalmological miscellany. (*Ophthalmologische Miszellen.*) *Woch. f. Ther. u. Hygiene des Auges*, 27 Oktober, 1904.

Kauffmann offers a few more or less disjointed remarks upon (1) strychnine in eye work, (2) thermometry of the eye, and (3) the treatment of burns of the eye by lime with irrigation.

Veith, J.—Upon a new apparatus for fixing the neck-electrode while applying the electrical stream to the eye. (Ueber einen neuen Apparat zum Festhalten der Nacken-Elektrode bei Anwendung des elektrischen Stromes am Auge.) *Woch. f. Ther. u. Hygiene des Auges*, 13 Oktober, 1904.

Baslini, C.—Ophthalmometrical researches. (Recherches Ophtalmométriques.) *Archives d'ophtalmologie*, septembre, 1904.

Péchin and Brissaud.—Upon ocular hemiplegia. (De l'hémiplégie oculaire.) *Archives d'ophtalmologie*, juillet, 1904.

Parsons, J. Herbert.—Notes on ophthalmic neurology. *Recueil des travaux Xe congrès international d'ophtalmologie*, Lucerne, septembre, 1904.

Parsons gives an abstract of the experimental results obtained in dilating the pupil by stimulating the cortex cerebri. He also discusses the vaso-motor nerves of the eye.

Barrett, James W.—An attempt to estimate the risk of producing sympathetic ophthalmitis by perforating injury. *Intercolonial Medical Journal of Australasia*, January 20, 1904.

After analysing the figures at his disposal, Barrett concludes that "the risk of sympathetic ophthalmitis supervening in the case of a severe injury with irido-cyclitis is certainly not less than 5 per cent." "It is," he adds, "probably considerably more."

Truc, H., Delord, C., and Chavernac, P.—New researches upon the ocular stigmata of criminality. Examination of the prisoners in the central gaol of Nîmes. (Nouvelles recherches sur les stigmates oculaires de la criminalité. Examen des détenus de la maison centrale de Nîmes.) *Annales d'oculistique*, T. CXXXI, janvier, 1904, p. 53.

The authors of this communication publish the results of their examination of 566 male prisoners in the Nîmes gaol. The following points were determined in each case: (1) the visual acuity; (2) the visual field; (3) the colour vision; (4) the interpupillary distance; (5) external lesions; and (6) the ophthalmoscopic appearances. Into the figures thus obtained there is no need to enter here. We must content ourselves by saying that the writers have satisfied themselves that there are no appreciable ocular stigmata of criminality.

Vacher's cutting-out forceps for irido-capsulectomy. (Pince emporte-pièce de Vacher pour l'irido-capsulectomie.) *Gazette des Hôpitaux*, 1 décembre, 1904.

The accompanying illustration shows the instrument recommended by Vacher for the making of an artificial pupil in cases of secondary cataract without either dragging upon the parts or losing vitreous.



Lacausade.—Asepsis and antisepsis in ocular surgery (Asepsie et antisepsie en chirurgie oculaire.) *Ophthalmologie Provinciale*, novembre et décembre, 1904.

Lacausade, of Alençon, has two long articles upon asepsis and antisepsis in eye surgery, in the course of which he discusses asepsis of the operative field, disinfection of the hands, sterilisation of the instruments, dressings, bandages, collyria, etc.

Phillips, William Linton.—A case of Idiosyncrasy to homatropine and atropine. *Ophthalmic Record*, January, 1903.

Atropine and homatropine produced little effect either upon the pupils or the accommodation of Phillips's patient, a woman aged 27 years.

Dennis, David.—Empyema of the frontal sinus-orbital complication treated by super-heated steam. *Archives of Ophthalmology*, July, 1904.

Zion, Oswald.—Test-types in Hebrew character according to Snellen's formula V. = $\frac{5}{16}$. (Sehprobentafel in hebräischer Sprache nach der Snellen'schen Formel V. = $\frac{5}{16}$.) *Woch. f. Ther. u. Hygiene des Auges*, 29 Dezember, 1904.

Zion simply substitutes for the Roman character of Snellen's distance-type, letters in Hebrew character. MAX P.

Gould, George, M.—The reception of medical discoveries. *Annals of Ophthalmology*, October, 1904.

Moon, Robert C.—The education of the blind, with especial reference to the use of the Moon alphabet. *Annals of Ophthalmology*, October, 1904.

Moon, Robert C.—A case of unilateral retinitis pigmentosa.
Annals of Ophthalmology, October, 1904.

A lad, 11 years of age, was found by **Moon** to have retinitis pigmentosa, limited to one eye. No such changes had been noted when the patient was examined three-and-a-half years earlier.

Truc, H. and Colina, A.—A professorship of diseases of the eye at the ancient surgical College of Montpellier (1788). [*Une chaire des maladies des yeux à l'ancien collège de chirurgie de Montpellier (1788)*]. *Annales d'oculistique*, T. CXXXII, p. 199, sept., 1904.

This is a historical article showing that a chair of ophthalmology was founded at Montpellier in 1788, but allowed to lapse and re-established in 1891. R. J. COULTER.

Truc.—The degrees and limits of blindness. (*Degres et limites de la Cecité.*) *Annales d'oculistique*, T. CXXIX, 1903, p. 321.

Blindness is defined by **Truc** as a morbid condition, congenital or acquired, constituted by absence or incurable inadequacy of vision. Socially, blindness is present when vision is not good enough to find one's way alone, to work, and to attend to one's individual wants. Blindness may be (1) Absolute, without any perception of light; (2) Complete, with simple perception of light; and (3) Relative, with insufficient perception of form. Under ordinary conditions of the visual field, education, and intelligence, a visual acuity of 0.1 should be regarded as the borderland of blindness. Socially speaking, above that point there may be said to be sight, and below it, blindness. The different degrees of blindness described above and the limit of 0.1 should, in **Truc's** opinion, be accepted by blind asylums, the army, courts of justice, assurance companies, and others interested in the question.

H. DE V.

Nuel, I. P.—Who was the first to demonstrate experimentally the reversed image of visual objects upon the retina? (*Qui a le premier démontré expérimentalement l'image renversée des objets visuels sur la rétine?*) *Archives d'ophtalmologie*, août, 1904.

Laas.—Sympathetic ophthalmia after septic trauma in spite of treatment by iodoform. (*Sympathische Ophthalmie trotz Einführung von Jodoform nach septischer Eisensplitter-Verletzung.*) *Klin. Monatsbl. f. Augenheilkunde*, 1903, Bd. I, p. 401.

The interest of **Laas's** case (septic wound by splinter of iron) lies in the fact that although the introduction of iodoform into

the anterior of the eye is able to arrest the inflammation, yet the danger of sympathetic inflammation of the other eye is not thereby eliminated. A. BIRCH-HIRSCHFELD.

Wintersteiner.—Rupture of the sclera in posterior staphyloma. (*Ruptura sclerae in staphylomate postico.*) *Klin. Monatsbl. f. Augenheilkunde*, 1903, Bd. I, p. 499.

Wintersteiner considers the rupture of the sclera in the region of the posterior staphyloma to be a form of trauma characteristic of and peculiar to highly myopic eyes. He has observed two such cases, one of which he subjected to careful anatomical examination. For details of the latter, the original communication must be referred to.

A. BIRCH-HIRSCHFELD.

Beaumont, W. M. — A note on the eye symptoms associated with rheumatoid arthritis, with especial reference to the field of vision. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 308.

In support of the view that rheumatoid arthritis is of nervous origin, **Beaumont** points to ephemeral palsies of the ocular muscles, slight ptosis, hippus, and insensitiveness of the conjunctiva and cornea as symptoms that he has not infrequently observed in patients suffering from that curious disease. The common symptom, however, is a concentric contraction of the field of vision for white and for colours. This observation Beaumont has made with great care upon a number of men and women affected with rheumatoid arthritis, and, for purposes of control, has repeated his experiments upon healthy persons belonging to the same social class. The administration of amyl nitrite causes, in these cases, a temporary enlargement of the boundaries of the field of vision. Beaumont's observations, when confirmed, promise to possess something more than a mere scientific interest.

Fridenberg, Percy.—A test for central colour-perception. *Archives of Ophthalmology*, May, 1903.

Percival, A. S.—Periscopic Lenses. *Archives of Ophthalmology*, July, 1903.

Peters.—Glaucoma caused by emotion. *Med. Weekblad voor Noord-en Zuid Nederland*, October, 1903.

An elderly lady lost the vision of her right eye by an attack of glaucoma, following violent emotion. Pilocarpine restored vision, but a few days later another attack was brought on by the same cause, and after a third attack, also due to emotion, iridectomy brought cure.

G. F. ROCHAT.

Terson, Albert.—Therapeutic and clinical notes. (Notes thérapeutiques et cliniques.) *La Clinique Ophtalmologique*, 10 juin, 1904.

Lister, W. T., and Hancock, W. I.—Epithelial plaques of the conjunctiva. *British Medical Journal*, September 26, 1903.

Jackson, Edward.—The ophthalmoscopic examination of the macula. *Ophthalmic Record*, June, 1903.

Jackson concludes an interesting article with the following summary:—"The region of the macula can usually be examined with the ordinary ophthalmoscope through the undilated pupil, if the instrument be used to the best advantage. The corneal reflex can be so reduced as to allow the surgeon to see through the pupil alongside of it: by making the sight-hole small, 1.5mm. in diameter, by holding the sight-hole so that one edge of it is in front of the centre of the surgeon's pupil, or by using the half mirror. The visible field can be enlarged by getting close to the patient's pupil and excluding all unnecessary light. The illumination of the retina can be rendered brilliant at a certain point, or diffused equally over the whole visible field: by adjustment of the source of light at the proper distance from the mirror; and by placing the right lens in a trial frame before the patient's eye."

Steindorff, Kurt.—The influence of temperature and season upon the attack of acute primary Glaucoma. (De l'influence de la température et de la saison sur l'attaque de glaucome aigu primitif.) *Recueil d'ophtalmologie*, XXV (1903), p. 515.

Steindorff's statistical study is based upon 83 cases of acute primary glaucoma seen in Hirschberg's Berlin *clinique* during the seventeen years intervening between 1885 and 1902. It was found that the greatest number of cases were met with in the cold season (October to March). The maximum was reached in January and the minimum in June. Acute glaucoma occurred when the temperature was extremely high, and, especially, when it was extremely low. In cold weather the blood-pressure is raised, and this would influence the intra-ocular tension, particularly in old persons in whom arteriosclerosis interferes with the proper regulation of the body temperature. Many authors believe that primary glaucoma is an arterial sclerosis (Haab). Apart from temperature, Steindorff could trace no connection between glaucoma, on the one side, and humidity, wind, rain or clouds, on the other. Other

factors that may exert a special influence during the winter months include the long nights, giving rise to dilatation of the pupil, and conditions of bad illumination, causing fatigue of accommodation. H. DE V.

Sommer, G.—The determination of the refraction of the eye by means of the shadow test. (Die objective Bestimmung des Brechzustandes der Augen vermittels der Schattenprobe.) *Wochenschrift für Therapie und Hygiene des Auges*, 26th November, 1903.

Sommer praises retinoscopy, and thinks that this method of determining the refraction is not as generally adopted in Germany as it deserves. He recommends especially the instrument of Professor Hess, which secures a constant interval of 120 cm., between examiner and patient. C. MARKUS.

Wolfberg.—A test type appliance. (Ein Sehprobengestell.) *Wochenschrift für Therapie und Hygiene des Auges*, 6 Oktober, 1904.

In Wolfberg's test cards, which are fixed to a revolving framework, the various types are represented by one letter only. Besides, the arrangement is such that two cards exhibit only letters formed from oblique lines and the two others only letters composed of straight lines, so that in a case of astigmatism an estimate of the position of the axis may be quickly arrived at. A patient with perfect eyesight is supposed to make out *all* the letters at a distance of 5 mètres.

C. MARKUS.

Kipp, Charles J.—Some observations on the prognosis and treatment of hypopyon-ulcer of the cornea. *Trans. Amer. Ophthalm. Society*, Vol. X, Pt. II, 1904.

Hypopyon-ulcers in which fine, grey lines radiate from the edge of the lesion into the surrounding cornea heal, in Kipp's experience, under such comparatively simple measures as the use of atropine and of warm boric lotion. Briefly, these curious striæ are looked upon by the author as evidence that the progress of the ulceration has been arrested.

REVIEWS.

Eye, Ear, Nose, and Throat Nursing. By A. EDWARD DAVIS, A.M., M.D., Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital, and BEAMAN DOUGLASS, M.D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. With 32 illustrations. Pages XVI-318. Size, $5\frac{1}{2} \times 7\frac{7}{8}$ inches. Extra cloth. Price, \$1.25, *net*. Philadelphia: F. A. Davis Company, Publishers, 1914-16, Cherry Street.

This little book has been written as a guide for the intelligent care and nursing of the various diseases of the eye, ear, nose, and throat, and to instruct the nurse as to her exact duties during and following operations upon these organs. Antisepsis and asepsis have received particular attention, and a brief outline of the anatomy and physiology of the parts has been given. Careful reading of the work shows that it has been well prepared, and that it can be unhesitatingly recommended to those for whom it is intended. C. A. O.

Alling and Griffin's Diseases of the Eye and Ear. A Manual for Students and Physicians. By ARTHUR N. ALLING, M.D., Clinical Professor of Ophthalmology in Yale University, Department of Medicine, New Haven, Connecticut, and OVIDUS ARTHUR GRIFFIN, B.S., M.D., late Demonstrator of Ophthalmology and Otology, University of Michigan, and Oculist and Aurist, University Hospital, Ann Arbor, Michigan. In one 12mo volume of 263 pages, with 83 illustrations. Cloth, \$1.00, *net*. Philadelphia and New York: Lea Brothers & Co., Publishers, 1905.

This brief manual, arranged for "quizzing" purposes and yet kept free from breaks in the continuity of the subject matter, has proved very interesting reading. The text, limited to cardinal facts alone, has been made useful not only to the student for whom it is intended, but to the practising physician in the better management of his cases. Both the authors and the editor are to be congratulated upon the production of a useful book. C. A. O.

Graefe-Saemisch Handbuch der Gesamten Augenheilkunde. Leipzig: Wilhelm Engelmann, 1904. Bd. V., Kap. IV. Dr. T. SAEMISCH. **Die Krankheiten der Conjunctiva.**

The two volumes before us, issued, the first in August and the second in December, 1904, contain an account of the various diseases of the conjunctiva, the work of Dr. Theodor Saemisch, of Bonn. The volumes are well printed, and contain numerous

text-illustrations, together with several plates. The author gives a very careful and full description of the various affections of the conjunctiva, and the bibliography appended to each section appears to be unusually complete. It need scarcely be said that the new edition of the famous Graefe-Saemisch *Handbuch*, when completed, will, perhaps, represent the most important collective account of disease, etc., of the eye to be found in any language. With a few notable exceptions, all the contributors are of German nationality.

Tumors of the Cerebellum—Reprinted from the "New York Medical Journal" and the "Philadelphia Medical Journal"
—New York: A. R. Elliott Publishing Company, 1905.

This is a reprint of a series of articles on the diagnosis and surgical treatment of tumors of the cerebellum. It is a concise summary of present-day knowledge, but hardly indicates any new departure. The chapter dealing with optic neuritis and other ocular symptoms is from the pen of Dr. G. E. Schweinitz. Dr. Chas. K. Mills writes on diagnosis, and Dr. C. H. Frazier on methods of operation.
C. O. H.

The Ophthalmic Year Book for 1905. By EDWARD JACKSON, A.M., M.D., and GEORGE E. DE SCHWEINITZ, A.M., M.D. Large 8vo, pp. 319. Denver, Colorado: The Herrick Book and Stationery Company, 1905.

The continued purpose of this, the second volume of one of the newest of Year Books on ophthalmology, is to supply a *résumé* of the most important contributions to ophthalmic literature during the year 1904, together with a list of books and more important journal-articles bearing upon ophthalmology, appearing during the same period of time.

The editors hope, that the "publication will be so sustained, and can be so perfected, as to furnish a series of volumes through which the ophthalmologist will be enabled promptly to grasp, and to hold at easy command, the most important new facts bearing upon his professional work," has been well borne out in the present volume.

We can cordially recommend the work.

C. A. O.

Les troubles oculaires d'origine génitale chez la Femme.

Par E. BERGER, membre correspondant de l'académie royale de Belgique, et ROBERT LOEWY, Chef adjoint de clinique gynécologique à la Faculté de Médecine de Paris. Paris: Félix Alcan; 1905, pp. 232. Prix 3 francs.

The connection of ophthalmic troubles with disturbance of the

generative organs of women has received considerable attention, both from gynæcologists and from ophthalmic surgeons, as the list of upwards of three hundred authors appended to this work abundantly testifies. It is noticeable, however, that by far the larger proportion of the literature on the subject has accumulated during the last twenty years, and this has been diligently studied by the authors. They have adopted the plan of considering the various diseases of the eye which occur in association with the epochs of development, activity, and decline of the generative functions in the female, citing cases illustrating their remarks from different authors. Thus, by studying the symptoms which have been recorded as of frequent or occasional occurrence in menstruation, they show that this process may react upon the eye either in a reflex manner; by alterations in the composition of the blood, especially by that fluid becoming charged with toxic products; by changes in the circulatory system as by modifications of the blood-pressure; by the digestive troubles that often accompany this state; by exaggerated neurotic conditions, such are seen in hysteria, neurasthenia and Basedow's disease; and, lastly, by increase at each menstrual period of ophthalmic troubles that are in process of evolution.

The chief diseases of the eye associated with menstruation that have been mentioned by authors are œdema of the lids; hordeolum, which, however, has been rarely noted, although it is perhaps of frequent occurrence; herpes; chemosis and ecchymosis of the conjunctiva; ulcers of the cornea; hæmorrhage into the anterior chamber; and more or less photophobia, and other symptoms indicating fatigue of the retina probably associated with anæmia. In addition, various symptoms presented by the extrinsic muscles are not infrequent, displaying themselves by paresis of the muscles of convergence, and consequent asthenopia. Many of these affections, the authors suggest, may be due to the formation of toxins and to the occurrence of auto-intoxication, and they point out that to a similar condition may be attributed some, at least, of the various affections of the eye which are associated with gestation, as for example, amaurosis, amblyopia, strabismus, diplopia, hemeralopia, glaucoma, optic neuritis, and many others. Whether this view of the ætiology of the diseases that are often observed to accompany menstruation and pregnancy be correct or not, the authors have done good service in bringing together numerous cases scattered in many publications not easily accessible, and thus forming a basis on which others, and especially general practitioners, may build. It is an hypothesis, and a reasonable hypothesis, but one that requires much confirmatory evidence.

Die Augenveränderungen bei den Erkrankungen des Nervensystems. Von PROF. W. UHTHOFF, Breslau. Mit sieben Tafeln und drei und zwanzig Figuren im Text. 1904. **The alterations in the eyes occurring in diseases of the Nervous System.** By PROF. W. UHTHOFF, of Breslau, with 7 plates and 24 figures in the text. Leipsic: William Engelmann. 1904. pp. 260.

This work is a reprint of an article which the author contributed to the eleventh volume of the "Handbuch der Augenheilkunde" of Graefe-Sacmisch and is a very complete account of the subject of which it treats. The ocular manifestations of nervous disease are, as a rule, only briefly discussed in ophthalmological treatises, yet an immense amount of attention has been paid to them, as is shown by the fact that in the bibliography of the section on *tabes dorsalis* alone, commencing with the "*Recherches et observations sur la moelle épinière*" of M. V. Hutin, written in 1828, Prof. Uththoff has collected the titles of no less than 555 separate articles up to 1904, and even then refers for the older literature to the valuable article by Professor Leber in the same *Handbuch*.

Prof. Uththoff primarily divides the affections of the nervous system associated with eye disease into the "Strang- und System-Erkrankungen des Rückenmarks" which may be translated into English by the expression, "Disease of the columns and of the centres or systems, of the spinal cord"; and primary diffuse disease of the cord, including under the former heading *tabes dorsalis*, hereditary ataxia or Friedreich's disease, spastic spinal paralysis (lateral) sclerosis; combined disease of the posterior and lateral columns of the cord, congenital spastic contraction (Little's disease), poliomyelitis anterior acuta, subacuta, et chronica, acute ascending spinal paralysis (Landry's paralysis), and primary degeneration of the motor paths. Under the second heading he includes myelitis, multiple or disseminated sclerosis of the brain and spinal cord, syringo-myelia (gliosis spinalis or Morvan's disease), tumours of the cord, affection of the spinal cord consequent upon disease of the vertebræ, and, lastly, wounds and injuries of the cord.

The hemianopsia, that occurs in *tabes* is not true hemianopsia. It differs from the ordinary form of that affection in the circumstances that, if carefully examined, it is found to be asymmetrical. The alterations in the colour-sense are, in tabetic nerve atrophy, frequently, very early and fairly characteristic. When the whole nerve is affected the colour-sense fields for red and green become contracted, and the colours appear to be paler, green appearing grey, and red at first yellowish, and, later, also, greyish, though the perception of green sometimes remains longer than that of red. With strong illumination the colour of

objects can still be discriminated, which is not the case in the congenitally blind. The perception of blue and yellow, and especially of blue, is retained much longer than that of red and green. Ultimately, all colours appear grey, but in such cases there is always great impairment of the sharpness of vision.

In regard to the origin and seat of the atrophic process in tabes, there appears to be no doubt that the atrophic process in the optic nerves commences in the peripheric neurones; that is to say, in the ganglion cells and nerve fibre layer of the retina, and from thence proceeds centripetally along the nerve paths. No changes are observed in the chiasma and tractus optici in the earlier stages, and when found later they are not by any means so marked as in the peripheral portions of the optic paths, rarely extending upwards beyond the optic ganglia, the corpus geniculatum externum, the thalamus opticus, and the corpora quadrigemina. The degenerative process is admitted by nearly all observers to commence in the optic nerve fibres, and to affect only secondarily the interstitial tissue. The primary changes are in the white substance of Schwann, and the axis cylinders are secondarily affected. No satisfactory reason has hitherto been assigned for the special implication of the optic nerves in tabes. Antecedent syphilis occurs in a large proportion of cases—in perhaps about 60 per cent. of cases, others give 90, or even 100 per cent.—but it is not the cause of the symptoms.

Professor Uhthoff devotes a section to the subject of the relation of the pupils to tabes, and gives a plate in which he indicates, by means of coloured lines, the course taken by centripetal red and green sensations, which semidecussate in the chiasma like the ordinary sensory fibres; by the centrifugal fibres affecting contraction of the pupil proceeding from the sphincter nucleus in the floor of the aqueduct of Sylvius; by the sympathetic pupil dilating fibres from the cilio-spinal centre, to the dilatator pupillæ, and, lastly, by sensory fibres from the skin and other parts to the centrum cilio-spinale, as well as some doubtful sensory fibres from the cortex cerebri to the same centre.

The prominent symptoms of tabes dorsalis that have been observed in the eye, are those which indicate atrophy of the optic nerve, disturbances of the function of the ocular muscles and the pupil; and some others which are of subordinate importance, such as disorders in the area of distribution of the 5th nerve, in that of the sympathetic nerve, in the lacrymal secretion, and in the tension of the eye. Speaking from his own experience of ophthalmic institutions, Prof. Uhthoff considers that 40 per cent. of tabetic patients suffer from optic atrophy, but from the experience of general physicians like Gowers, Buzzard, Eulenberg, and many others, he is inclined to take 10-15 per cent. as the average. On the other hand, he estimates that out of every

hundred cases of optic atrophy attending ophthalmic hospitals, 37 per cent. are tabetic. The proportion of males to females is as 2 : 1. Optic atrophy occurs, in general, at an early period in tabes, and may long remain the only symptom. The colour of the disc is chalky-white, and the commencing discoloration often long precedes any noticeable failure of vision ; but failure of vision, it is to be remarked, is almost always accompanied by an alteration in the tint of the disc. The retinal vessels present no change until the latter period of the disease, when they may become somewhat diminished in diameter. Impairment of vision is usually slowly progressive, resulting in blindness in the course of two to three years although extremes of two to three months and twelve years have been recorded. As a rule, one eye is affected sooner than the other, and, although with extreme rarity, one eye may remain long unaffected when the other has become blind. The progress of the atrophy, it may be remarked, very rarely remains stationary. There do not appear to be any other lesions of the fundus besides the optic atrophy that are constantly associated with tabes. As regards the impairment of vision, it may either affect the whole field, the central part presenting a scotoma, and the visual field for form and colour being contracted, or in another class of cases there may be failure of vision in these respects corresponding to the quadrants of the disc, which are atrophic in both cases, causing impairment of vision in the central and peripheric regions alike, thus differing from the typical field in retrobulbar neuritis and toxic amblyopia, in which there is a central scotoma, but no impairment of the peripheric area of the field. If in any case of tabes there is persistent bilateral central scotoma with good peripheric vision, it is certain that there is some complication, as of syphilis or some affection of a toxic nature.

Professor Uhthoff discusses at considerable length relations of the pupil in tabes and especially the Argyll Robertson symptom or the reflex pupil-cramp (*reflectorischen Pupillenstarre*). He finds this symptom occurs in about 62 per cent. of tabetic patients and he gives a table representing the frequency of its occurrence in various other diseases, as in paralytic dementia, multiple sclerosis, and various cerebral affections. He also describes in succession : (1) Total reflex insensibility of the pupil for light, for accommodation and for convergence. (2) The abolition when light falls on one eye of any reaction in the other eye. (3) Ophthalmoplegia interna or paralysis of the sphincter iridis and of accommodation. (4) Abolition of dilatation of the pupil as a result of sensory and psychic stimuli. (4) Myosis, reaction to light and in accommodation and convergence being preserved. (5) Mydriasis under similar conditions. (6) Varying anisocoria. (7) Hippus. (8) Paradoxical dilatation of the pupil under the stimulus of light.

(9) Hemianopic reaction of the pupil and various other conditions that have been observed and recorded. Statistics of the frequency with which these symptoms are observed in cases of tabes with and without syphilis are given.

Another section is devoted by Professor Uhthoff to affections of the ocular muscles in tabes. The frequency with which the several muscles are affected is given. He finds that about 1 in 5 tabetic patients is affected by ocular muscular troubles of one kind or another, the seat of the disease being in the nerve centres. There are sensory disturbances of the V nerve in 4 or 5 per cent. of tabetics.

There are also special sections on hereditary ataxy or Friedreich's disease, especially characterized by nystagmus; on spastic spinal paralysis or lateral sclerosis, and upon combined disease of the lateral and posterior columns of the cord; congenital or inherited at an early period; spastic paralysis (Little's disease); poliomyelitis anterior acuta, or acute atrophic spinal paralysis of children, and of adults, and poliomyelitis anterior subacuta and chronic (subacute and chronic spinal paralysis); acute ascending spinal paralysis (Landry's paralysis); and the primary degenerations of the muscles and motor paths, of which there are several subdivisions.

The primary or more diffused diseases of the spinal cord, which constitute a second great group of affections in which the functions of the eye are impaired, include myelitis, with abscess; multiple sclerosis of the brain and cord; syringomelia, or gliosis spinalis or Morvan's disease; tumours of the cord; disease of the vertebræ with attendant spinal lesions, and, finally, wounds of the cord.

The symptoms of eye affections in each of these cases are fully considered.

To give an outline even of the symptoms connected with the eye in each case, would be far beyond the limits of this notice, but the practitioner who has under his care a case of any one of the numerous affections of the nervo-muscular apparatus may turn to these pages with the certainty that almost every instance that has been reported is here included and that he will be able to foretell with considerable approach to accuracy what the progress and termination of the case, so far as regards the eye, will be.

HENRY POWER.

NOTES AND ECHOES.

News Items. AT the quartercentenary celebrations of the Royal College of Surgeons of Edinburgh, held during July, the honorary Fellowship was bestowed upon Professor Ernst Fuchs, of Vienna. Mr. John Tweedy, President of the Royal College of Surgeons of England, was similarly honoured. A committee, of which Dr. Motais is a member, has been formed at Lyons for the purpose of collecting subscriptions to erect a statue to the late Professor Gayet, of that city. The memory of Professor de Vincentis is to be similarly honoured at Naples.

* * * *

"Pink Eye." AN outbreak of so-called "Pink Eye" (acute catarrhal ophthalmia) is reported from Roxborough, Wissahickon, Manayunk, and Frankford, Philadelphia, U.S.A. As usual, children are the chief victims to the disorder. We gather from the *Medical News* that many of the children are sent home from school, especially from the Mantawna and Shawmont Public School. There can be little doubt that ophthalmia, like many other diseases we could name, is fostered and spread by the agency of schools, whether residential or otherwise. When an epidemic breaks out, it would be sound policy for the time being to put an end to the aggregation inevitable from school attendance. At all events, it looks uncommonly like "locking the stable door after the steed is stolen" to delay so obvious a step until the outbreak has diffused itself widely amongst the child population. As regards trachoma in residential schools, the conditions are obviously different. To disperse such an institution would be merely to scatter the seeds of infection abroad amongst the parents and friends of the children.

* * * *

Ophthalmology at Oxford. THE course of ophthalmology, organised to meet the wishes of practitioners, many of whom took advantage of the opportunity, came to an end on July 15th. It was under the direct ægis of the University, and was organised by Mr. Robert W. Doyme, the popular Reader in ophthalmology. Its existence at that seat of classic lore affords marked evidence of the increased interest now being taken in medicine by the oldest English University. At a

dinner held at Keble College on July 10th, a welcome was extended to the members of the class by Professor Osler. In the course of his address the newly-appointed Regius Professor of Medicine did not hesitate to express his personal conviction that ophthalmology was perhaps the only truly scientific and wholly satisfactory branch of medicine. In no other department had diagnosis attained so high a pitch of perfection. The Professor recalled vividly the three months he had once spent in studying eye work at the Moorfields Hospital, under such masters of the subject as Hutchinson, Tay, and Nettleship. Mr. Hutchinson's work in ophthalmology, as in other subjects, he characterised as perhaps the most important ever done in England. Professor Osler pointed out that the advantages of post-graduate instruction were better appreciated in America than in England. Practitioners on the other side of the water had found out long ago that such instruction possessed not only a scientific, but also a commercial value.

* * * *

Regulation Fees. OUR readers may be interested to learn that the lowest fees recommended by the A.B.V.K. Elberfeld-Barmen Congress in

February, 1905 were as follows, as regards some of the commoner ophthalmic operations :—Ectropion, 10 marks; entropion or ptosis, 20 marks; extirpation of the lacrymal sac, 20 marks; peritomy, 5 to 15 marks; tenotomy, 15 marks; advancement, 25 marks; iridectomy, 20 marks; cataract or glaucoma, 50 marks; enucleation or evisceration, 30 marks; Krönlein's resection, 50 marks.

* * * *

Travelling Ophthalmic Hospital. RECENT numbers of the *Egyptian Morning News* contain Mr. A. F. MacCallan's report for the year 1904 upon the work accomplished by the travelling ophthalmic "hospital" amongst the poor of Egypt. The scheme, as readers may recollect, was rendered possible by the generosity of Sir Ernest Cassel, who contributed a trust with a capital of £40,000, the interest of which was to be devoted to the treatment of those suffering from diseases of the eye. The proposal to create a travelling ophthalmic "hospital" on the lines of those organized some years ago in Russia, was due to Sir Horace Pinching. From the report we

gather that during the year 1904, the actual number of patients examined and healed was 3,379. The number of visits paid to the hospital by patients was 18,973. The operations performed numbered 1,268. The town of Menuf—one of the most populous in the Delta—was selected for the first encampment. An acre of ground was hired on the outskirts of Menuf, and was enclosed by a rough cotton-stalk fence. The camp itself consisted of a number of tents for operations, examinations, and accommodation of the staff, British and native. The furniture was naturally selected with especial regard to portability and simplicity. The staff included Mr. McCallan, (the surgeon in charge), a native doctor, a clerk, a hospital attendant, a nurse, a cook, a washerman, and two gaffys. The camp remained at Menuf from January to June, 1904. Later in the year a new camp was organised at Galioub, and another at Medina-el-Fayoum. Patients were treated free of charge, and from the first the fellahin availed themselves freely of the opportunities placed before them. The majority of the patients were affected with trachoma, and most of the operations were undertaken for the relief of trichiasis. It is pointed out in the report that one of the consequences of the absence of skilled ophthalmic advice is to drive sufferers into the hands of quacks, who treat cases of trachoma in the following way: “their *modus operandi* is to include between two pieces of reed a horizontal fold of the skin of the upper eyelid. The opposed extremities of the reeds are tied tightly together, and the patient has to wait until the fold of skin sloughs. In many cases temporary improvement results from the drawing away of the eyelashes from the eyeball, but it is at the cost of so much shortening of the upper eyelid that the unfortunate patient can often never again close his eyes, with disastrous results to his sight.”

* * * *

Ophthalmological
Society.

THE annual general meeting of the Ophthalmological Society, held on July 7th, 1905, was by no means so dull as such assemblages are apt to be. The spirit of contradiction seemed to be abroad in the land. The President was subjected to a good deal of what is known to political audiences as “heckling.” The proceedings opened harmoniously enough with the presentation of the Council’s report. The next item on

the list, the balance sheet, caused, however, some discussion. But the main bone of contention lay in certain recommendations proffered by the Council, not so much as to the wisdom of the said recommendations, but rather as to the order in which notice had been given. Member after member popped up, and after rendering confusion worse confounded, sat down amid the applause of the others present. The President, Mr. J. Tweedy, ruled that due and proper notice had been given, but then, for reasons best known to himself, failed to enforce his own ruling. Members were not slow to avail themselves of this opening. Amongst the recommendations of the Council was one to the effect that occasional meetings of the Society be held in the provinces. After considerable discussion, it was proposed by Mr. Secker Walker, seconded by Mr. Sydney Stephenson, and carried, "That extra-metropolitan meetings of the Society may be held at such times as may be determined by the Council." All that is now necessary to carry this resolution into effect is for the Council to receive an invitation to meet at some extra-metropolitan centre. From all we can hear, there is likely to be not only one such invitation but several.

At the same meeting the following office-bearers were elected for the Session 1905-1906 :—President : Priestley Smith. Vice-Presidents : Charles Oldham, F. W. Mott, Robert Doyne, John Tweedy, G. Sims Woodhead, A. Hill Griffith, J. B. Lawford, and E. Treacher Collins. Treasurer : John Abercrombie. Librarian : W. Adams Frost. Council : E. Collier Green, Secker Walker, W. Aldren Turner, Sydney Stephenson, F. E. Batten, E. E. Maddox, S. J. Taylor, J. Herbert Fisher, A. Freeland Fergus, J. C. Uhthoff, Rayner D. Batten, and L. Vernon Cargill. Secretaries : J. S. Risien Russell and C. Devereux Marshall.

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ORIGINAL COMMUNICATIONS.

THE SIGNIFICANCE OF THE EYE-SYMPTOMS IN DISSEMINATED SCLEROSIS OF THE BRAIN AND SPINAL CORD.

BY

PROFESSOR W. UHTHOFF, Breslau.

Complying with the invitation of the Editors of THE OPHTHALMOSCOPE, I have pleasure in giving the following summary of my own experiences of the eye-symptoms in disseminated insular sclerosis of the brain and spinal cord. I leave the literature on this subject out of account, as also the history of the question, and bring towards the acquisition of definite knowledge only the results of my own observations, as I obtained them on the basis of 150 cases, in the form of a short *résumé*. With regard to more exact data and literature, I refer readers to my earlier works on the subject.*

For the diagnosis of disseminated sclerosis, are, among eye-symptoms, the changes in the nervous optic conducting

*"Untersuchungen über die bei der Herdsclerose vorkommenden Augenstörungen."—*Arch. f. Psychiatr. u. Nervenkrankheiten* XXI. 1 u. 2. 1899 u. *Handb. d. Augenheilkunde*, 2 Aufl. Bd. XI. Kap. XXII. II. 1904.

apparatus above all in the optic nerve, the most important. Thus, the ophthalmoscopic appearances are in nearly half the cases pathological, and consist in simple atrophic alterations in the colour of the papilla.

These may be divided into three groups :—

1. Atrophic discolouration of the whole papilla.
2. An incomplete atrophic pallor of the whole papilla, so that the inner parts of the papilla still retain a slight reddish tint.
3. A partial limited atrophic discolouration of the temporal part of the papilla.

Cases of the first group (*i.e.*, total atrophic discolouration of the papilla) are comparatively rare, constituting 3%–4% of the total number of cases; the 2nd and 3rd groups always constitute about 20% of all cases.

In 5% of all cases, moreover, optic neuritis is to be noted, a condition which undoubtedly has a certain important significance. In the literature, the occurrence of a typical prominent congested papilla is indeed mentioned, but I have not observed it among my cases; it must consequently be designated as, in any event, very infrequent. It is certainly undoubted also that the simple atrophic discolouration of the papilla (the total as well as the incomplete and the partial) has partially preceded a neuritic change of the papilla, as I could surely show by the past history in certain of my cases. The changes in the papilla in multiple sclerosis are consequently more often of an inflammatory neuritic nature than appears at first glance.

This fact also agrees very well with the pathologico-anatomical results of examination with regard to the optic nerve changes in disseminated sclerosis.

To these visible ophthalmoscopic pathological changes, must be added yet about 5 per cent. of the cases of disseminated sclerosis, where, indeed, disturbances of sight occur, but no diseased ophthalmoscopic changes are visible. Consequently, the optic nerves, or more particularly the optic conducting apparatus, in at least 50% of the cases are affected sympathetically.

The clinical manifestations of visual disturbance also often have a peculiar character; they may be very manifold, thus corresponding exactly to the other symptoms of the disease. But mostly the amblyopia of disseminated sclerosis resembles the visual disturbances which we observe in so-called retrobulbar neuritis.

The conditions of **the field of vision** may be grouped as follows :—

1. The occurrence of central scotomata with a free peripheral field of vision. The scotomata are more frequent on both sides than on one only, and are more often relative than absolute. The

demonstration of the scotomata may be, under some conditions, very difficult, and occasionally requires very fine test methods. In over one-half of all cases with demonstrable anomalies of the field of vision, it is a question of the occurrence of such central scotomata.

2. In rare cases the occurrence of the central scotoma with a simultaneous peripheral contraction of the field of vision.

3. In a considerable percentage of cases there exists peripheral, more irregular, contractions of the field of vision.

4. In isolated cases regular concentric functional contractions of the field of vision can be found in pure multiple sclerosis, as well as when that disease is complicated by hysteria.

5. A ring-scotoma seems to occur occasionally. I have seen it only once.

6. In isolated cases, a change of this kind can be effected in the condition of the field of vision, that, in the outset, a certain anomaly is present, which, however, clears up (*e.g.*, a central scotoma), and then another place is seized and here the abnormality persists, *e.g.*, a peripheral contraction. I have met with a case of this kind.

Anomalies with decided hemianopic character seem to occur very seldom, although, according to my experience, the chiasma and optic tract are comparatively often the seat of sclerotic changes. In every case, the anomalies of the field of vision correspond throughout to the picture of the peripheral affections of the optic nerve trunk.

With reference to the relation of the demonstrable visual and field of vision disturbances to the already present ophthalmoscopic changes, attention may be called to the fact, that precisely in disseminated sclerosis, these two factors do not often veil each other.

This has its reason obviously in this, as is found anatomically, that the ophthalmoscopic expression of the pathological papillary changes, by no means always reflects the anatomic lesions of the optic nerve, which present the actual cause for the disturbances in sight and field of vision. Very frequently a descending atrophic degeneration of the diseased area producing the visual disturbance is absent, which consequently is also not reflected in the appearance of the papilla.

The commencement and the course of the visual disturbance in disseminated sclerosis have often a peculiar character. In almost one-half of the cases, the visual disturbance sets in quickly, and indeed often suddenly; later improvement of the appearances, which occurs in about 50 per cent., is also a sign that it is often not a matter of simple degeneration phenomena of the optic nerve fibres. In the second half of the

cases, the visual disturbance appears slowly and more gradually. In both cases, the affection may be present on one or both sides. Permanent bilateral complete blindness must be looked upon as extremely rare in disseminated sclerosis. I have seen only one case of the kind; other authors of large experience never saw this occurrence (Charcot).

Transitory, complete, or almost complete, blindness occurs, indeed, somewhat more frequently, but is then frequently one-sided, and in these cases a neuritis is not seldom found.

A recurrence of the visual disturbances in multiple sclerosis is no rare occurrence. In one of my earlier cases a one-sided amaurosis, setting suddenly in, cleared up, only to recur after some years.

The disturbance of colour-vision is relatively often quite insignificant, so that the possibility of recognising colour in the affected areas of the visual field is not completely removed, although the colours appear "darker" and "less distinct." Obviously, insignificant disturbances of this kind of colour-vision are often overlooked by authors in the affected parts of the visual field, when they report an absence of every anomaly of the field of vision, with decided lessening of visual acuity. Occasionally one needs here the use of very small coloured objects, and a supplement of white to the colours, in order to demonstrate the disturbance with certainty.

In individual cases, a remarkable analagous condition exists between the visual disturbances and the other symptoms of disseminated sclerosis in which it is evident that areas of disease are under consideration, which, however, must be, in position, located quite differently in the nervous system. Thus, one of my patients suddenly developed a left-sided amblyopia under the form of peripheral disease of the optic nerve, whilst at the same moment a paresis of the right half of the body occurred.

It must also be mentioned that bodily strain and fatigue in patients with multiple sclerosis and visual disturbances may exert a direct and very damaging influence, which then, on recovery of the patient, will also retrogress again.

As in the clinical course of the visual disturbances, a great difference exists between the visual disturbances in tabetic and progressive optic atrophy, so also the pathologico-anatomical examination of the optic nerve changes in disseminated sclerosis shews in part peculiarities. It lies, indeed, in the nature of the matter, that in the optic nerve changes in multiple sclerosis, it is a question of the same changes as in those of the central nervous system in general, in this disease. Still, it must not fail to be appreciated, that precisely the anatomical conditions of the optic nerve, the chiasma, and the optic tract, in connection with the

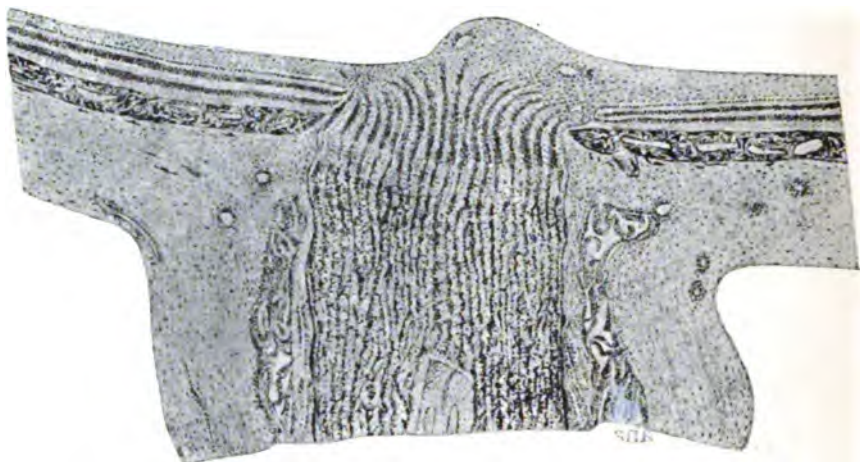


Fig. 1.

Optic atrophy in multiple sclerosis with distinct interstitial alterations and well preserved nerve-fibres and ganglion-cell layers of the retina.



Fig. 2.

Partial neuritic optic atrophy with distinct perineuritic changes of the inner nerve-sheath in multiple sclerosis.

possibility of the very exact clinical analysis of the disturbances, appear adapted to provide also an elucidation of the anatomical conditions of these changes in general.

It must from the outset be granted that anatomically the optic nerve changes in disseminated sclerosis appear analogous in part with those of the progressive tabetic atrophy, and are here also, doubtless, to be recorded as a simple atrophic process (disappearance of the medullary sheaths, destruction of the nerve fibres, absence of pronounced inflammatory interstitial changes, and so on). Also, a simple ascending or descending spreading degeneration in a sclerotic area is by no means always absent; although this is, relatively, often the case. In the second place, old changes of medullary sclerosis may finally present essentially the picture of simple atrophy, which in the fresh stage had another, a more interstitial inflammatory character. In the third place, one finds in an apparent analogy to simple atrophy, on an exact study of the changes, quite frequently, still finer differential diagnostic distinctions, which consist particularly in a retention of the axis cylinder in multiple sclerosis, in Charcot's sense. The more one strives, however, by staining methods, to make, besides the atrophic nerve-substance, the nuclei and hyperplasia of neuroglia specially evident (double staining with carmine, hæmatoxylin, Weigert-alumcarmine, Weigert's neuroglia stain, and so on), the more frequently can one demonstrate differences in the anatomical condition of the two pathological states, particularly when one has opportunity to examine fresh optic nerve changes of disseminated sclerosis. Occasionally changes of pronounced interstitial inflammatory character are found, which can spread both to the larger connective tissue septa and to the inner optic nerve sheath. As examples of this, I give prints of two different cases, of which the first (*see* Fig. 1), is a vertical section through the papilla, and the second (*see* Fig. 2) is a transverse section through the middle of the orbital part of the optic nerve. In both cases the changes show a pronounced inflammatory atrophic character.

As regards the vascular system, marked pathological changes are often found, consisting partly in an increase and widening of the finer vessels, partly in changes in the walls themselves, and then in preceding proliferation in the surroundings. Whether the vessel changes are primary, and the rest of the changes are causing forces yet remains an open question.

The pathological appearances as regards **the eye-muscles** play, in like case, a very important rôle in the diagnosis of disseminated sclerosis, and divide themselves into :—(1) actual eye muscle paralyses, and (2) nystagmus and nystagmus-like twitchings. Eye-muscle paralyses of a pronounced character occur, in my experience, in about 20% of the cases of dissem-

inated sclerosis. If one adds to this the slighter grades of associated lateral pareses, without the manifestation of diplopia, then this percentage rises to a considerable extent.

The clinical manifestation of the muscular disturbances points very frequently and certainly to a central seat of the cause of the paralysis. Occasionally orbital muscle pareses in multiple sclerosis may be caused by anatomical peripheral trunk affections of the motor nerves; still this is relatively seldom, compared with the various direct cerebrally-caused eye-muscle disturbances. Throughout, the pareses are relatively slight, incomplete, and often quite transitory. A complete lasting paralysis of an ocular motor nerve is, at all events, a great rarity. With regard to the incompleteness of the functional disturbances, accordingly, a great analogy exists between the visual disturbances and the eye-muscle disturbances, whilst as to the seat of the diseased areas a great difference prevails. In the region of the optic nerve, the peripheral trunk-diseases are very frequent, and the optic nerve thus shews itself to be an actual part of the brain, while the eye-movement disturbances are caused throughout centrally—that is to say, cerebrally, and only relatively seldom are peripheral changes of the nerve trunks at the bottom.

The nervus abducens seems comparatively most often to be affected; the oculomotorius more rarely, and only partially; a complete, isolated oculomotorius paralysis in all branches, as in basal peripheral processes, seems hardly to occur. Of the associated eye-movements, those in lateral directions are most frequently affected, while the upward and downward movement are less often concerned. Complete paralysis of all orbital muscles on both sides seems to be very rare; I saw this only twice in 150 observations, and here it was due, as the autopsy in one shewed, to very extensive sclerotic changes of the nuclear area of the eye-muscle nerves in the floor of the ventricle, and the floor of the aquæductus Sylvii. Convergent and divergent pareses occur occasionally, and are obviously also of cerebral origin.

On the whole, the pareses of ocular muscles in disseminated sclerosis occupy a peculiar position.

Nystagmus and the nystagmus-like twitchings of the eyes in multiple sclerosis play, as is known, a very important rôle in diagnosis (Charcot and others). It is absolutely necessary to keep these two movement disturbances distinct, not only according to their diagnostic value, but also according to their clinical appearances. Both phenomena may occur at the same time in the same patient, and indeed register thereby their principal diversity. I have seen that in some cases.

According to my experience, actual nystagmus occurs in about 12% of the cases of disseminated sclerosis and has an important diagnostic significance in this disease, whilst in other diseases of

the central nervous system it occurs as a relatively rare symptom. The diseased areas causing actual nystagmus in disseminated sclerosis must be sought throughout in the cerebrum. Apparent movements of objects appear here in a number of the cases among the symptoms. The brain areas concerned herewith may be quite extensive and heterogeneous (mid-brain, corpus striatum, thalamus opticus, corpora quadrigemina, cerebellum, medulla oblongata, floor of the IV ventricle) and also the results of section in human beings point, in the first place, to the mid-brain, corpora quadrigemina, medulla oblongata, and cerebellum.

In multiple sclerosis, the nystagmus-like twitchings are considerably more frequent than actual nystagmus, and according to my material in 46%—*i.e.*, 16% in a lateral direction and 30% in all directions, when the muscles were in extreme action. It must, however, be observed that nystagmus-like twitchings also occur relatively more frequently in other diseased conditions; indeed, they may be occasionally met with even in healthy people, so that thereby their differential diagnostic significance is very lessened.

A number of authors have gone too far in the estimation of the diagnostic value of this symptom in multiple sclerosis. In the sense of a dissociated eye-movement (convergent and divergent) I have in my series of 150 cases seen no nystagmus. For the nystagmus-like twitchings, a peripheral origin can doubtless occur, although they are certainly caused more frequently by a cerebral area of disease.

The behaviour of the pupils offers in multiple sclerosis, on the whole, few pathological or diagnostically important phenomena. A loss of pupil reflex to light and miosis is a very rare appearance—0.75% according to my material, and likewise one-sided dilatation of the pupil with abolished reaction to light. Miosis with very slight light reaction, I saw in 5%; pronounced difference of the pupils in 4%. In the case of loss of pupil-reflex to light, the section showed extensive sclerotic changes in the floor of the 4th ventricle, and of the Aqueductus Sylvii up to as far as the 3rd ventricle. Parinaud's dictum, that "always, when a patient, who suffers from an affection of his nervous system, presents miosis with a still retained reaction to light, it is necessary to put away the idea of tabes and to think of disseminated sclerosis" is truly warranted in many respects, but it can claim no absolute validity.

A pupil abnormally active to light falls in multiple sclerosis sometimes under observation, yet diagnostically not much is to be gained by this symptom because, first, the conception of the abnormally active light reaction, as opposed to the physiological state, is difficult to define, and, secondly, because in other anomalies of the nervous system

(hysteria, epilepsy, neurasthenia, and others) a pronounced abnormally active light reaction is occasionally observed. It is clearly not right also to draw a parallel between a very active light reaction in multiple sclerosis and the also otherwise strongly increased reflexes in the region of the transversely striated body musculature, especially of the extremities.

Similarly the hippus (as cause of the pupil changes) has no essential diagnostic significance in disseminated sclerosis.

Disturbances of the trigeminal nerve, of the facial, and of the sympathetic in the region of the eye are occasionally observed in multiple sclerosis, but have, however, no essential diagnostic significance.

On the whole, we find a true reflection of the different symptoms in multiple sclerosis precisely in the pathological eye appearances in this disease. Here, in a diagnostic connection, special reference is directed to those cases where the patients offer actually only the picture of spastic paresis of the lower extremities, and where, then, symptoms as regards the spinal cord are foremost, and where the demonstration of certain ocular symptoms may be alone decisive for the diagnosis, since through them is determined with certainty the presence of cerebral areas and consequently a cerebral localisation of the disease.

THE EARLY SYMPTOMS OF INSULAR SCLEROSIS.

BY

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In the case of a disease, the course of which is spread over such a very long period as insular sclerosis, it is a matter of some difficulty to say which are really the earliest symptoms. It is often impossible exactly to date the commencement of the disease; the early symptoms are usually very transient and easily overlooked or forgotten, and they are, in many cases, overlaid by hysterical phenomena, as to which we are at a loss to say whether they are really a part of the disease or the indications of a psychological condition which is a frequent antecedent and concomitant of the organic disorder.

What is certain is that the variety of the initial symptoms is very great, and that this fact renders it important that they should be clearly recognised by those who are likely to come across them.

Perhaps the easiest and most logical way is to deal with the so-called hysterical symptoms first, as they are undoubtedly, in not a few cases, the first indication of anything wrong. When we say hysterical symptoms, we should rather say symptoms which are usually regarded as hysterical. We have to recognise the fact that some symptoms which fifteen years ago we looked on as hysterical, we now regard as indicative of organic disease ; others we are still uncertain about. Transient ocular paralysis, and temporary amaurosis, are now, for the most part, held to be warnings of organic disease ; although, of course, similar occurrences may be purely functional. It must be admitted that it is impossible in many cases to give a definite diagnosis at first ; all we can do is to watch the case with suspended judgment ; the great difficulty is the length of time by which the earliest symptoms may precede the pronounced disease. Thus, in one of my cases, temporary loss of vision, lasting about twenty-four hours in one eye, and passing off after a few days in the other occurred ten years before any other symptoms. Are we to regard this as a purely functional matter, or as a functional disturbance due to the oncoming of organic disease ? This is a question which we can answer fully only when we know more of the pathology of hysteria. It is to be noted that the mental condition characteristic of hysteria—that which leads to malingering and to self-injury—is also found in the hysterical stage of insular sclerosis.

The same thing applies to those instances of sudden and transitory loss of power in one limb, which are one of the commonest modes of onset of insular sclerosis, perhaps even commoner than the ocular symptoms. Experience has shown that the cases in which this occurs almost invariably prove to be organic disease. In fact, Dr. Buzzard goes so far as to say that he cannot recall any case with such a commencement that eventually turned out to be functional. It may be added that bilateral paralysis of an acute character is, on the whole, against insular sclerosis ; the onset of paraplegia is usually gradual, and the ocular pareses are rarely bilateral, although the defects of vision may be so, owing to the frequency of patches of disease in the chiasma. The early motor lesions are much more often uni- than bi-lateral, although they may be double.

As regards sensory symptoms, it may be said that any high degree of anæsthesia is against insular sclerosis and in favour of hysteria ; the sensory disturbances of the former, at least in the early stage, are usually slight, and consist in paræsthesiæ, such as numbness and tingling, often occurring in the legs first, and preceding in some cases the onset of definite motor weakness. In a few cases there may be actual pain, and in some very severe pain, but this is rare, especially as an early symptom.

We have hitherto dealt with symptoms, which, if occurring singly, it is at least possible still to regard as not incompatible with functional disorder, although many of them are in process of transference from the functional to the organic category. None of these symptoms can be considered to be conclusive evidence of the disease, even if more than one be present, but there are signs and symptoms any one of which in conjunction with any of those already mentioned would render the diagnosis practically certain. If we find nystagmus well marked, scanning speech, intention tremor, or pallor of the discs, incontinence of urine, or the extensor reflex on plantar stimulation, we may be certain that we have to do with insular sclerosis. (The statement with regard to the last two must be qualified by the limitation that they only make us certain of organic disease, which may or may not be sclerosis.) Of the symptoms mentioned, nystagmus may occur quite early, but in half the cases is not present at all. If true nystagmus is present, it is a symptom of the utmost importance, as nystagmus hardly occurs in any other condition apart from albinism or hereditary defects. We must distinguish true nystagmus from the spurious form, which occurs in certain neurotic people and bears much the same resemblance to the true, as pseudoclonus does to true clonus, *i.e.*, it is a flickering oscillation which soon dies down.

Intention tremor, again, is a symptom of the first importance, and if it be found in any doubtful case is conclusive as to the nature of the disease. It is generally seen fairly early in the onset, if carefully looked for. It is present ultimately in 75 % of all cases. Incontinence of urine is occasionally present in the early stage, and is then a diagnostic symptom of great value; it is almost always found in the later stages, where the lower extremities are affected. Pallor of the discs, often of a very partial character, and associated with some defect of vision, is a symptom of very great importance in early stages, when it occurs. It requires considerable care to detect and some experience to be certain of it, as it is often very slight, but the most careful observers are agreed that it occurs in nearly half the cases. It is still a moot point what condition precedes the pallor, as papillitis is unquestionably very rare, although hyperæmia has been noted. It is perhaps worth recording that in one of my cases, already alluded to, in which there was marked pallor of one half of one disc, very definite hyperæmia had been noted ten years before by an ophthalmic surgeon whom the patient had consulted for a transient failure of vision at a time when the disease was totally unsuspected. I venture in THE OPHTHALMOSCOPE to lay some stress on this point, because these cases frequently come first into the hands of ophthalmic surgeons, and it would be of the very greatest value

to have a series of careful observations of the state of the discs in cases of sudden failure of vision, which may possibly be of this character. Any temporary failure of vision in persons between twenty and forty years should be looked on with suspicion, and the state of the discs and ocular movements carefully noted.

No discussion of the early symptoms of insular sclerosis would, of course, be complete without a consideration of the reflexes, which are of great importance. The knee-jerks are in a very large majority of cases exaggerated, often grossly, and this in quite an early stage of the disease; they are rarely absent. Ankle-clonus is frequently present, also at an early stage, but may not appear until later. The extensor plantar reflex, more important than any as a sign of organic disease, may appear at any time should a patch of sclerosis interfere with the fibres of the pyramidal tract at any point, but it does not indicate the nature of the disease, any more than do increased knee-jerks or ankle-clonus.

The condition of the superficial reflexes in the early stages of the disease is hardly sufficiently known to permit of definite statement, but they are said to be absent in a majority of all cases.

To sum up, then, we must admit that there is still considerable uncertainty about the early symptoms of insular sclerosis, and that an uncertainty which, in the nature of things, is not very likely to be easily removed. It is one of the most remarkable characteristics of the disease that the morbid process which attacks the nerve tissue, is exceedingly slow in destroying its functions—in fact it is doubtful whether it ever does completely destroy it. Hence the remarkable remissions, local and general, which occur in the disease, and constitute one of its most striking features. We may surmise from this that the morbid change has probably been in progress some time before it gives rise to any definite symptoms; the earliest indications of the disease are probably merely those of premature exhaustion either of special organs, or of the body generally, such symptoms as are to be found, in fact, in many cases of neurasthenia. Further, we have seen that the symptoms at the time when the patient first comes under observation are often indistinguishable from those of hysteria, or, more correctly speaking, are those of hysteria, making allowance for the fact that symptoms formerly regarded as hysterical are now not so considered. We must therefore admit that other symptoms of the same character may turn out to be organic. Again, the very slow course of the disease in many cases makes the tracing of its onset a difficult matter, and the early symptoms, which are specially liable to be of a very transitory character, are easily overlooked.

Lastly, as we should expect from the pathology of the disease, the first symptoms may be of the most varied character, according to the locality of the islet of sclerosis that makes itself felt, and may be taken as the indication of a local rather than a general affection. Nevertheless, when we review a large number of cases, we find certain facts established. The initial symptoms, when the patient comes under observation, in a majority of cases, take the form of some kind of motor paralysis, affecting one limb, or one or more ocular muscles, or else of a temporary and partial loss of vision. It is exceedingly rare for these symptoms to persist, but they are very apt to recur in the same or another part, *e.g.*, in the other leg or opposite eye. In addition to this, we must recognise a definitely hysterical mode of onset, with all the stigmata of hysteria. Finally, we must admit that what we may call the specific but not pathognomonic symptoms of the disease, *viz.*, nystagmus, intention tremor, and scanning speech, are often absent till a later stage, and cannot be placed among the early phenomena of the malady, constituting another reason why our diagnosis has to be held in reserve.

A CASE OF INFANTILE CEREBRAL DIPLEGIA.

BY

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K. T., a girl of 19 years, has been under observation for just over five years. When first admitted, at the age of 14, her size and physical development corresponded with the normal of about 11 years, whereas her mental capacities hardly equalled those of a healthy child of 6 or 7. She was totally blind in both eyes, and unable to stand owing to paralysis of the legs.

History and Family History.—Up to the age of 6 the child had seemed to develop naturally in body and in mind. At that age some mental weakness first showed itself, and this had increased steadily but slowly up to the time of her admission. At the age of 8 she had an epileptic fit—the first—and, apparently dating from this event, she gradually and slowly lost voluntary power in both legs, which simultaneously became stiff. The patient's eyesight was good until about one year before her admission, when she could easily recognise people on the other side of the street. Her vision had rapidly failed to total extinction at her 14th year. The girl had never menstruated.

The family history disclosed neither alcoholism nor syphilis in either parent. No other member of the family showed a similar

affection ; the patient had two sisters and one brother, all older than herself, and all enjoying good health. Further details as to family history and prenatal history could not be satisfactorily obtained.

On Admission.—The legs were in a state of spastic paralysis, to such a degree that she could not make the least attempt to stand, although she could still, unaided, sit up in bed. The ankles were extended, the feet in the equino-varus posture, and the knees extended and closely adducted, sometimes involuntarily crossed. While she lay in bed the rigidity of the joints could still be overcome by little force, but any attempt to place her on her feet was immediately attended by a great increase in the rigidity. The knee-jerks were equal and small, and the plantar reflexes of extensor type. The bladder and rectum were perfectly controlled. The arms were, perhaps, a little weak, but only very little. The grasp of each hand was rather poor, but she could use the arms freely, and knitted skilfully despite her blindness. The muscle reflexes of the forearms were considerably raised.

The patient was, as already remarked, totally blind, and had not even perception of light. The pupils were equal ; there were no corneal opacities and the media were perfectly clear ; and the fundi so far easy to see. Each eye showed optic atrophy together with choroido-retinitis. At this time the girl was shown at one of the medical societies and there seen by several ophthalmic surgeons, the opinion of some being that the ocular disease was a "severe choroido-retinitis with more particular suffering of the retina and correlative optic atrophy," that of others : "possibly a case of choroido-retinitis in earlier years, followed by recent intracranial disease coupled with double optic atrophy, the latter being independent of the former choroiditis." This latter opinion was founded upon the observations that the "choroidal and retinal destruction was not nearly so complete as the optic atrophy." Personally, I felt more inclined towards the former judgment, seeing that a clear history was obtained of perfect vision so short a time as one year before admission. There was very marked nystagmus in all directions, rendering examination of the fundi very laborious ; but no squint.

Mind.—The patient was placid, and evinced no particular sharpness of hearing or auditory attention. She was silent until addressed, but then immediately became garrulous, talking volubly and very childishly, although not in an imbecile manner. The voice and speech were normal.

General condition.—The complexion was sallow and muddy, the bridge of the nose rather sunken, but there was no active disease of the nasal bones or of the nasal mucosa. The teeth were bad and mostly consisted of stumps ; the right central upper

incisor was distinctly notched ; the palate was rather high-pitched. There were no other signs of congenital syphilis. The state of general nutrition was fair, the legs alone showing a little wasting, as from disease.

Progress.—The disease has advanced quite slowly and gradually from admission up to the present date, and its progress has shown no sudden steps. On the other hand, there has been nothing that could be called genuine improvement. In May, 1903, it was remarked that she had mastered part of the "blind-alphabet," but it was only a small part ; she took no real interest in it and soon forgot it again, and I incline to think that at any previous period, had the same trouble been taken to teach her, she would have grasped it more easily. Epileptic fits have occurred in great number during the last three years, both major and minor in character, mostly in the night or early morning, although frequently also in the daytime. On no occasion have the seizures marked any aggravation in the general condition, and the first epileptic coma has never lasted long. The convulsions are equally bilateral. In the last few months she has had noisy, maniacal attacks, during which she has shouted and kept the whole ward awake for hours together, and been found muttering incoherently but articulately to herself ; been restless, torn her clothes, being prevented from getting out of bed only by the paralysed condition of the lower limbs. Yet even during these attacks she has listened to questions and answered them rationally when simple enough for her to apprehend.

Present condition.—The patient's present condition may be thus described : the legs are much wasted, contracted, and acutely flexed at the hips and knees, the ankles and toes being rigidly extended. No volitional movement whatever is possible, and very little involuntary movement of any kind occurs. The contractions cannot be overcome by any reasonable amount of force. She can no longer sit up unaided, and if raised in her rest, tends to fall over sideways or backwards, the thighs and legs moving as though one piece with the trunk. The knee-jerks are no longer obtainable ; the plantar reflexes are of extensor type, the right being slightly the more marked. All control over the bladder and rectum is lost, and she never even asks assistance when the calls of nature press. The arms show no increase of weakness. She can still use them freely, can knit, and often rubs her face and legs. But she will not feed herself from a plate, and only performs this act, when food is placed in her hands.

The face and tongue show no paralysis.

The pupils are wide and equal. The fundi show very complete optic atrophy with much dwindling of the vessels ; some patchy,

and a little irregular linear, pigmentation of the retinae; no obvious changes near the macula. The changes are very equal in the two eyes. Nystagmus continues, making examination of the eyes difficult.

The patient is very weak-minded. She listens attentively to questions, answers them intelligibly and with clear articulation, but repeats her sentences over and over again, until brought up by a new query, whereupon the reply undergoes the same repetition. When told to stop she does so instantly. She still remembers her home-address (which she left five years ago), the names of her brothers and sisters, and those of the wards through which she has necessarily passed, as well as the several hospitals to which she has been taken in the last 9 or 10 years. Her whole manner of speaking is strongly suggestive of an automaton. At times, not necessarily preceding or succeeding an epileptic attack, she sings aloud, and one tune is sometimes recognisable, but she mixes up inextricably the words of three hymns. At other times she mutters to herself. She has not developed any acuteness of hearing to compensate for her blindness.

There is no disturbance of sensation. No bed sores have appeared. She has grown very little, if at all, the exact height being difficult to measure owing to the rigid flexion of the legs.

Remarks.—There can be no doubt that this is a case of chronic progressive cerebral degeneration, characterized by dementia, intense spastic paralysis of the lower limbs, and atrophic eye changes. The upper limbs have, so far, escaped in a noticeable manner. But then, as a rule, in such cases their involvement is much less severe than that of the lower extremities. The face is entirely unaffected, as is usual in this disease. The etiological factors which have been discovered in cerebral diplegias are so numerous and various that practically any condition which can be conceived as predisposing to a weak foundation of the central nervous system, or to the undermining of the same, even although it be fundamentally healthy, may be looked upon as a cause of this disease. In the present case the appearance of the patient and the few characteristics above described strongly suggest a congenital syphilitic taint, even in the absence of any obtainable family history. The choroido-retinitis, which is so pronounced a feature, is further in favour of syphilis. In non-syphilitic cases, although macular changes and optic atrophy have been observed, choroido-retinitis is, as far as I know, not described; personally, I have seen it in this patient alone, out of a total of eleven examples of progressive cerebral diplegia which have come under my observation.

I would insist that if this case be looked upon as a result of congenital syphilis, the degeneration must be regarded not as

an abiosis, but as being due to the syphilitic poison, an important pathological distinction, which, however, does not probably influence the clinical picture so far as the purely nervous symptoms are concerned, and is not likely to influence the prognosis, inasmuch as the lesions are, in all probability, parasyphilitic in character.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—TREATMENT

(Fourth Notice.)

- (1) **Darier, A.**—Purulent ophthalmia due to streptococcus ; corneal ulceration ; failure of silver nitrate and of protargol. Cure in three days by Roux serum. (Ophtalmie purulente à streptocoques ; ulcérations cornéens ; insuccès du nitrate d'argent et du protargol. Guérison en trois jours par le sérum de Roux.) *La Clinique Ophtalmologique*, 10 mars, 1903.
- (2) **Jocqs, R.** (Paris).—The influence of the sea-air and salt water baths on certain eye affections. (De l'influence du climat marin et des bains salins sur certaines affections oculaires.) *La Clinique Ophtalmologique*, 25 avril, 1903.
- (3) **Prioux, Charles.**—On the employment of sublimate. (Contribution à l'emploi du sublimé.) *La Clinique Ophtalmologique*, 10 juin, 1903.
- (4) **Abadie, Charles.**—Therapeutic indications for the intra-venous injection of cyanide of mercury. (Indications thérapeutiques des injections intra-veineuses de cyanure de mercure.) *La Clinique Ophtalmologique*, 10 juillet, 1903.
- (5) **Poinot, C.**—A contribution to the treatment of retinal hæmorrhages and secondary glaucoma. (Contribution au traitement des hémorrhagies rétinienues et du glaucome consécutive.) *La Clinique ophtalmologique*, 10 août, 1903.
- (6) **Seabrook, H. H.**—Amber yellow glass in the examination and treatment of eyes. *Medical News*, 22nd August, 1903.

- (7) Darier, A.—Amblyopia ex anopsia improved by massage from $\frac{1}{50}$ to $\frac{1}{3}$. (Amblyopie ex anopsia améliorée de $\frac{1}{50}$ à $\frac{1}{3}$ par la massage.) *La Clinique Ophthalmologique*, 10 novembre, 1903.
- (8) Peschel, Max.—Subconjunctival injections of alcohol. (Subkonjunktivale Alkoholinjektionen.) *Klin. Monatsbl. f. Augenh.*, 1903, II, p. 504.
- (9) Darier, A.—Radium and X-rays :—Action of radium on human tissues—cutaneous accidents—relapsing sloughs—alopecia and whitening of the hair—pigmentation and bleaching—action of X-rays and radium upon the eye—fluorescence of the media—blepharitis, keratitis and retinitis caused by X-rays and radium—excitation of the visual centres. Re-education of the blind by the methods of Drs. London and Heller. (Radium et Rayons X :—Action du Radium sur les tissus humains—Accidents cutanés—Escharres à rechutes—Alopécie et canitié—Pigmentation et depigmentation—Action des rayons X et du Radium sur l'œil—Fluorescence des milieux—Blépharites, keratitis, et rétinitis par rayons X et Radium—Excitations des centres visuels. Ré-éducation des Aveugles par les procédés des Drs. London et Heller.) *La Clinique Ophthalmologique*, 25 février, 1904.
- (10) Abadie, Chas.—The treatment of the various forms of glaucoma. (Traitement du glaucome et de ses diverses variétés.) *La Clinique Ophthalmologique*, 25 février, 1904.
- (11) Spoto.—The value of dionin in ophthalmic practice. (Sul valore della dionina nella pratica oftalmologica.) *La Clinica Oculistica*, Febbraio, 1904.
- (12) Römer, Paul.—Directions for the clinical investigation of the Serumtherapy of serpiginous ulcer of the cornea. (Anleitungen für klinische Untersuchungen ueber die Serumtherapie des Ulcus serpens.) *Zeitschrift für Augenh.*, März, 1904.
- (13) Parry, T. Wilson.—A case of paroxysmal labyrinthine vertigo associated with special ocular symptoms and alleviated by seton. *Lancet*, 5th March, 1904.

(1) Darier was consulted in a case of purulent ophthalmia which had commenced on the tenth day after birth, and which had been treated by silver nitrate and by protargol for four days without influence on the progress of corneal ulceration or on the conjunctival false membranes. On the ground that microscopically the gonococcus had been excluded and streptococci found in great numbers, Darier injected under

the skin of the abdominal wall 10 cc. of Roux serum, which he has found to be beneficial in such cases of streptococcus infection. He also employed dionine and argyrol. The latter was not well tolerated, and another injection of serum was given next day. On the day following, matters were somewhat improved, and an ointment of collargol was used every two or three hours, and serum again injected. From this time on the discharge ceased, and the corneal ulcers began to heal. Collargol ointment was continued less frequently. In one month the ulcers were healed. Darier remarks on the utility of serum injections in those cases with corneal complications in which silver salts are not well borne, but does not understand why they do not act on the gonococcus, although they act on certain streptococci and on the bacillus of Loeffler. He also states that collargol has a specific action on the streptococcus, and, when used after the serum injections, prevents relapses.

ERNEST THOMSON.

(2) In this article **Jocqs** extols the virtues of the seaside and salt baths in the treatment of phlyctenular keratitis, non-specific interstitial keratitis in which iodides are badly borne, and the forms of chronic iritis and irido-choroiditis which "are almost exclusively found among women." This "quiet iritis" of J. Hutchinson (junr.), the author states to be admittedly most often caused by utero-ovarian trouble, and not by syphilis or rheumatism.

ERNEST THOMSON.

(3) **Prioux**, of Rheims, describes a case of cataract extraction in which corrosive sublimate, 1 to 1,000, was used accidentally, instead of cyanide of mercury, before, during, and after operation. At the first dressing the skin was reddened, and the cornea cloudy. The anterior chamber had not formed. No suspicion attached to the lotion used for dressing the eye, since it was supposed to be cyanide 1 to 1,000. The cornea became progressively more opaque and the surgeon was completely mystified, until on the eighteenth day, the opacity being very great, and the anterior chamber not formed, he determined to refresh the edges of the wound. On dipping a curette into the solution supposed to be cyanide, he saw it become tarnished, and the whole trouble was explained. Prioux follows up the narration of this case with remarks on the danger of sublimate if it gain access to the anterior chamber, and points out that one drop of 1 to 15,000 solution may be disastrous to the endothelium. He is a strong supporter of the cyanide salt of mercury.

ERNEST THOMSON.

(4) **Abadie** has found that in certain cases intravenous mercurial injection will cure or restrain syphilitic symptoms where other plans, even subcutaneous injection, have failed. Further, this method does not give rise to local reaction or pain. In general terms, the manifestations which react better to intravenous injection than to other methods are the late and slowly acting ones which affect the nerve tissue of the retina and optic nerve. Similarly, syphilitic affections of the brain and cord respond well to this treatment. Abadie relates several cases, one of which may be here summarized. In a man of 54 years, who had contracted syphilis 26 years previously, the sight of the left eye began to fail. Diagnosis: choroido-retinitis. Treatment: mercurial frictions every day for two years. In spite of this, V. continued to fail, and commenced to fail in right eye from same cause. At this point the patient came under Abadie's care. Treatment: intravenous injection of 1 gr. of a 1 to 100 solution of cyanide every day for ten days, and afterwards every second day. After forty injections V. rose from R. $\frac{2}{3}$ L. $\frac{1}{100}$ up to R. 1, L. $\frac{1}{20}$. After a year of treatment—with intervals of rest—the vision was still maintained. A year after cessation of treatment, a relapse occurred which yielded to the same method.

ERNEST THOMSON.

(5) **Poinot** gives a long account of a diabetic who developed a separation of the retina in one eye and afterwards recurrent retinal hæmorrhages, ultimately followed by glaucoma, in the other. There is a great deal of detail in the article, but the main point is that the hæmorrhages could be made to cease for a time by means of subconjunctival injections of gelatinized serum (5 per cent. gelatin). Reference is made to papers on the subject in *La Clinique Ophtalmologique*, 10th November and 10th December, 1901, by de Wecker and by Rioux.

ERNEST THOMSON.

(6) **Seabrook** finds that this colour, which gives almost perfect protection from the chemic rays, does not impair vision, and corrects the chromatic aberration of the eye. Because of difficulty in obtaining this colour, he uses a biconvex lens of white glass split and cemented on plane glass of medium light amber-yellow. This causes less congestion, lacrymation, photophobia, pain, and pupillary contraction in examined eyes. There is some confusion at first from the changed colour of the iris and dulled corneal reflex. It probably causes slight relaxation of accommodation. The effect on spectral and pigment blue is different. This glass seems to be an important addition to present forms of treatment for hyperesthesia

of the retina. Seabrook has used it in chronic conjunctivitis following trachoma, in cataract, post-operative iritis, chorio-retinitis, glaucoma, etc. *American Medicine*, August 29, 1903.

(7) **Darier**, after referring to the work of Domec, of Dijon, on this subject, confirms by his own experience the curious effect of massage in improving visual acuity in amblyopic eyes. He is unable to offer any very plausible explanation of the fact, but suggests (1) mechanical effect on the lens and zonule, (2) tonic action on the ciliary muscle and the accommodation, (3) trophic effect, circulatory, secretory, and excretory, on all the ocular tissues and fluids, cornea, ciliary glands, choroidal capillaries, retina, etc.

ERNEST THOMSON.

(8) Alcohol possesses a strongly disinfectant action, as is shown by the favourable results of alcohol bandaging. In addition to this, it exercises a stimulating effect on the tissues (expansion of the arteries, increase of the blood-pressure, leucocytosis). Finally, it accelerates diffusion. After subconjunctival injection, as recommended by **Peschel**, a painless œdema of the conjunctiva bulbi and of the lids takes place. The eye itself is not injured. Peschel has successfully employed these injections in cases of keratitis, ulcer corneæ, iritis, irido-choroiditis, episcleritis, chorio-retinal complications of myopia, and sympathetic ophthalmia. He injects 1 ccm. 15 per cent. alcohol (with sensitive patients only 10 per cent.), and repeats the injection usually after from 2-5 days (rarely after only one day's interval) according to the effect. In detachment of the retina, retinitis pigmentosa, and retro-bulbar neuritis, the results were less favourable.

A. BIRCH-HIRSCHFELD.

(9) The title of **Darier's** article is so comprehensive it is hardly necessary to make any formal abstract. Special reference may, however, be made to the question of re-education of the blind. Darier points out that London's method of interposing cut-out figures between the eye and a platino-barium screen illuminated by radium, was anticipated by Heller, who educated a child "with marked amblyopia, not to say blindness, due to pigmentary retinal atrophy," by placing him in front of a brightly illuminated area in an otherwise dark room, and then interposing objects in silhouette.

ERNEST THOMSON.

(10) **Abadi** sums up the treatment of glaucoma at the present day in the following words: "At the present time the treatment of glaucoma is simple, the indications precise. In the acute and subacute forms, where inflammation, pain, and

high tension occur in paroxysms or crises of whatever kind, iridectomy is indicated, not myotics. In simple chronic glaucoma myotics, preferably pilocarpine in 1 % solution at least, should be instilled twice daily. Iridectomy should not be performed. When iridectomy and myotics fail, section of the cervical sympathetic is called for. ERNEST THOMSON.

(11) **Spoto** finds the effect of dionin to be only transitory in glaucoma, although it relieves the pain and lowers the tension for a few hours; in iritis it has a real permanent value, bringing about the rapid absorption of exudations in the pupillary region and calming pain. In the matter of corneal nebulæ, he is less confident; he thinks that the drug has a good effect when the scars are recent, but not when they are old. Nor has it any appreciable effect on the leucomata following burns from lime.

HAROLD GRIMSDALE.

(12) **Römer** gives a short account of modern investigation of the subject of anti-bodies, their complements and their mode of action. He reiterates his statements with regard to the curative effects of his anti-pneumococcus serum on serpiginous ulcers, and desires a more widespread clinical investigation of the subject. The more important questions to be decided are: How far an injection of this serum immunises against pneumococcal infection of the cornea? And, how long the period of immunity lasts? To what extent and up to what stage is the serum of use in an already acquired ulcer? Further, although an injection of this serum is absolutely harmless, what dose is most advantageously employed?

A. LEVY.

(13) A typical and severe case of Ménière's disease in a man, aged 43 years, associated with "floaters" before one eye. Later in the course of the case, photophobia supervened, and was always worse after a fresh attack of vertigo. Glasses were prescribed, and treatment by calomel, bromides, iodides, ammonium chloride, etc., was tried. A large seton was then inserted in the nape of the neck, and left in place for 78 days. The attacks became worse after the removal of the thread, so the seton was again inserted and appeared to do much good. **Parry** concludes that the treatment of Ménière's disease by seton is well worthy of trial.

II.—RÖNTGEN RAYS AND RADIUM.

- (1) **Birch-Hirschfeld, A.**—The effect of the Röntgen and radium-rays on the eye. (*Die Wirkung der Röntgen und Radium Strahlen auf das Auge.*) *v. Graefe's Archiv f. Ophthalmologie*, 59, 2, 11 Oktober, 1904.
- (2) **Pardo, R.**—The action of Röntgen rays on some affections of the eye. (*Dell'azione dei raggi Ronghi sopra alcune affezioni oculari.*) *Arch. di Ottalmologia*, Vol. XII, Fascicolo, Gennajo e Febbrajo, 1905.

(1) Besides containing important investigations on the pathological changes resulting from exposure of the eye to X - and to radium-rays, **Birch-Hirschfeld's** paper should be perused by every ophthalmic surgeon who intends to use rays for therapeutical purposes. The former method, especially, has given favourable results, not only in the treatment of tumours of the lids and neighbouring parts, but also in trachoma, tuberculosis of the conjunctiva, and similar affections (Stephenson and Walsh, Goldzieher, Mayou, etc.). Birch-Hirschfeld proves that the exposure of the eye to x -rays may, unless used rationally and with proper precautions, lead to most untoward complications. He gives the results of a long series of experiments performed with these rays on rabbits, as well as four cases in human subjects. In his experiments no stronger exposure was used as is often done for therapeutical purposes (between 10-20 units of *Holzknicht's* chromo-radiometer scale). Still, Birch-Hirschfeld finds in all his cases certain proof of the action of these rays in the anterior, as well as in the posterior, segment of the eyeball. They appear after a period of about a fortnight, and consist in blepharitis (with loss of hair and eyelashes), conjunctivitis, keratitis (similar in appearance to interstitial), and iritis. There were curious changes in the epithelium of skin, conjunctiva, and cornea; and vascular changes, especially of the endothelium. The posterior part of the eye shows evidence of optic atrophy; the microscopic examination reveals degeneration of the ganglionic layer of the retina, formation of vacuoles, shrinking of the nuclei and protoplasm, and degeneration of the medullary fibres of the optic nerve. In his clinical cases similar results have been observed, although the only one which was anatomically examined was, unfortunately, too complicated to warrant any strict deduction, as there was extensive destruction of the lids from carcinoma, to which part of the changes at least must be attributed. Still, there remain four clinical cases in which, after moderate exposure, symptoms of marginal keratitis appeared. The opacity affected the more superficial layers, and was in

some cases vascularised. It must be specially noted that the exposure was from ten to twenty minutes only ; that the eye, as a rule, was well protected by lead and tinfoil ; and that even in one case the keratitis appeared, although the rays had acted on the eye only from the side across the median wall of the right orbit. In the only case which was anatomically examined, there was evidence of a very curious cystoid degeneration, wholly confined to the macular region of the retina.

Birch-Hirschfeld cautions us against too strong and too quickly repeated exposure, as the effects are cumulative ; care must also be taken to protect the eyeball sufficiently. Where the integument, not of the lids, but of the temples, cheeks, or forehead only has to be treated, it will suffice to protect the eye with leadfoil ; but for the lid itself, metal plates, similar in construction to Jaeger's or Desmarre's compressorium, must be used, and can be applied without danger or inconvenience.

In comparing the physiological properties of the x -rays with the somewhat similar ultraviolet rays, important points of difference will be observed. The latter cause fluorescence of the media, as do the radium rays, while the x -rays act on the retina directly ; the lens, although also slightly absorbent to x -rays, is so much less than for ultraviolet rays, where it forms a most important protection ; there is also some difference in their respective action on the cellular elements of retina and cornea. The x -rays seem to act in some specific way on the cells, especially on those in active proliferation, as in tumours, in embryonic tissue, and in epithelial formations, exerting some inhibitory influence, without always destroying their vitality ; they also certainly have some action on the vessels, which seems to be superimposed, but does not in itself cause the changes in the tissues. The bactericidal action of the x -rays is inconsiderable as compared to the very active ultraviolet rays.

Radium rays have not yet been very extensively used in ophthalmology, and the author does not yet, of course, refer to the recent statements of Cohn* with regard to their employment in the treatment of trachoma. But it seems useful to record Birch-Hirschfeld's results, which clearly show the danger to the eye which must follow the indiscriminate use of radium rays. The effects of exposure in the rabbit were, indeed, varying in degree, but in general were very similar to the effect of x -rays. Birch-Hirschfeld was able to demonstrate very marked alterations in the nerve-cells of the retina, besides changes of the epithelial layer of the cornea, which would certainly have produced visual trouble in the human subject. Schwarz has advanced the theory that the specific action of radium is due to

* See THE OPHTHALMOSCOPE, February, 1905, p. 93.

decomposition of lecithin with production of trimethylamine. It remains doubtful whether x -rays have a similar action.

R. GRUBER.

(2) **Pardo** in this long and interesting article, after giving the action of Röntgen rays on the tissues of the eye, passes to the *technique* that has to be used in the application of this powerful agent, and, finally, mentions the diseases in which he profited most by its use. In trachoma, he affirms, this treatment has, in the first instance, the advantage of being painless, which renders it preferable to other methods, such as scraping, "expression," cauterization, and the like; and, secondly, of acting more deeply without destroying the normal elements, thus ensuring a more stable result. In episcleritis and scleritis, he says: "These rays represent a real discovery, inasmuch as there is up to the present day no other direct therapeutic agent, but only means amounting to a purely symptomatic treatment." With reference to other diseases, Pardo intends to make further experiments, and hopes to be able to communicate his results later.

CHARLES MANCHÉ.

III.—SPRING CATARRH.

- (1) **Malone, Wilson Prestman.**—Spring Catarrh. *Ophthalmic Record*, June, 1903.
- (2) **Allport, Frank.**—A case of vernal conjunctivitis. *Ophthalmic Record*, October, 1903.
- (3) **Burnett, Swan M.**—Circumcorneal Hypertrophy (Vernal Conjunctivitis) in the Negro. *American Journal of the Medical Sciences*, Vol. CXXVII, No. 2, February, 1904.
- (4) **Chacon.**—Spring catarrh, as observed in Mexico. (La conjunctivitis de primavera, como se desarrolla en Mexico.) *Archivos de Oftalmologia Hispano-Americanos*, Marzo, 1904.
- (5) **Veasey, C. A.**—Brief report of a case of spring conjunctivitis resembling malignant growth of the corneal limbus. *American Journal of the Medical Sciences*, May, 1904.
- (6) **Trantas, A.**—On the histology of ocular spring catarrh. (Sur l'histologie du catarrhe oculaire printanier.) *La Clinique Ophtalmologique*, 25 octobre, 1904.

(1) **Malone** discusses the symptoms, pathology, and treatment of that curious affection, Spring catarrh. With regard to treatment, he finds that the subjective symptoms of the bulbar variety of the disease yield to a lotion containing 10 grs. of sodium salicylate and 2 to 5 grs. of cocaine to the ounce of water. As to the tarsal manifestations of spring catarrh, he removes the diseased papillæ by the curette and a stiff tooth-brush.

(2) In an obstinate case of vernal conjunctivitis, where many remedies had been tried without success, **Allport** first removed the palpebral outgrowths, and then exposed the conjunctiva, everted by means of a lid-clamp, to the action of the x-rays. The patient, who was exposed about eighty times in all, obtained complete relief, while the conjunctiva became smooth and scarred. Allport believes that the patient is cured.

(3) In this article **Burnett** combats an opinion expressed by some observers, namely, that this condition may be a form of phlyctenular disease. The author points out, that whereas in the natural course in the latter disease ulceration always results, the distinguishing mark of circumcorneal disease is that it is not destructive; it is a true hypertrophy. He has observed that although it is specially found in the palpebral form—with large, hard excrescences rubbing on the cornea—there may be symptoms of irritation, but there is never any involvement of the cornea, aside from that of hypertrophy; moreover, he says, the dirty-gray elevations situated at the base of the cornea do not resemble any other pathological condition which is found there. He believes that changes are always present at the limbus, even when they are supposed to be limited to the lid. The characteristic appearances are described in detail. His personal statistics and those in his own city show that the disease is much more common in the negro than it is in the white race. As to the relative frequency of the bulbar and palpebral forms, the author believes that they are co-existent, one being so slight as to escape detection. He regards the disease as a manifestation of a dyscrasia, but does not know what that dyscrasia is. He cannot trace any relation to "scrofula" or to inherited syphilis. He draws attention to the facts that in Russia, where trachoma is extremely common, vernal conjunctivitis is very rare, and that the latter disease is comparatively common in the negro, who in America is practically immune from trachoma. From these findings, he draws the conclusion that a racial and a dyscrasic influence is shown, study of which may lead to an increased knowledge in regard to both diseases. F. W. MARLOW.

(4) Spring catarrh, both in the tarsal and bulbar forms, is not a very uncommon disease in Mexico, and, owing to the absence of trachoma in that country, is readily recognised.

HAROLD GRIMSDALE.

(5) A growth, 5 mm. by 7 mm., firmly adherent to the episcleral tissue, lay partly upon the ocular conjunctiva and partly upon the cornea of a man, 24 years of age. It presented an angry, bluish-red appearance. It had been slowly getting larger for two years. The tumour was excised, and examined microscopically. The latter led to the diagnosis of alveolar sarcoma, believed to have developed from a pigmented nævus of the conjunctiva. Recurrence in about eight months, followed a few weeks later by the development of similar but smaller patches on the inner and outer side of the other cornea. At this stage some enlarged papillæ were observed upon the upper tarsal conjunctiva of that eye, a structure that presented also the bluish-white appearance of spring catarrh. Further study of the sections of the original growth showed that the condition was really one of spring catarrh and not of sarcoma, as originally surmised. Amongst the several conclusions appended by **Veasey** to his communication one is not astonished to find: "That the clinical history must always be given consideration in the establishment of a diagnosis from the study of a microscopic section."

(6) **Trantas** gives a brief description of a microscopic section of a portion of the circumcorneal "cushion" in this disease. In particular he describes certain cystic cavities, empty and bounded by dense fibrous tissue, in the dermic layer. **ERNEST THOMSON.**

IV.—CEREBRAL DEGENERATION WITH CHANGES IN THE FUNDUS.

- (1) **Mayou, M. S.**—Cerebral degeneration, with symmetrical changes in the maculæ, in three members of a family. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 142. :
- (2) **Hutchison, Robert.**—A case of cerebral diplegia, with changes in the fundus. *Reports of the Society for the Study of Disease in Children*, Vol. IV (1904), p. 111.
- (3) **Hutchison, Robert.**—A case of progressive cerebral degeneration (family type). *Ibidem*, p. 112.

The cases reported below present several points of resemblance. They have therefore been grouped.

(1) **Mayou's** three patients were the offspring of first cousins. A doubtful specific history was obtained from the mother, who had been married for eleven years, and during that period had had one miscarriage and six living children. The patients were the second, third, and fourth children born. The cases were briefly as under : *No. 1.*—Male, aged 10 years, vision and intelligence began to fail at 6 years of age. Pupils dilated with sluggish reaction. Central vision almost certainly lost. Could see fingers at 2 feet with difficulty. At each macula was a reddish-brown spot, and around it a coarsely granular pigmented condition of the fundus. *No. 2.*—Female, aged 9 years, whose intellect began to fail at 6 years of age. Pupils sluggish. Optic discs somewhat pale, and granular pigmentation at the macula. *No. 3.*—Female, 8 years, who although very backward at school, had nevertheless more intelligence than the other patients. Pupils sluggish. Central fixation. V. = 6/36. Alternating divergent strabismus. Faint stippling at each macula. Mayou sums up the main features of his cases as under : (1) a syphilitic history in the parents, but no evidence of congenital syphilis in the children ; (2) the simultaneous onset of the ocular and mental condition, generally between the ages of 7 and 14 years ; (3) the loss of central vision ; and (4) the typical appearance of the macula described above.

(2) An imbecile child, aged 1 year and 5 months, lay with the limbs flexed upon the trunk in the "intra-uterine position." All the muscles were spastic. The condition dated from birth. There was complete blindness. The crystalline lenses showed diffuse opacities ; the optic discs were atrophic ; and the fundi exhibited extensive choroido-retinitic changes. **Hutchison** suggests that the case is one of arrested development of the cortical cells, possibly of syphilitic origin.

(3) **Hutchison** believes that the following case belongs to the group of family cerebral degenerations followed by optic atrophy. A lad, aged 4 years, began to suffer from "fits," lasting for several weeks, when about 2 years of age. He next lost the power of walking. At the present time, his legs are spastic, co-ordination is defective, and the child is mentally apathetic. The optic discs are rather pale. This patient's brother (now completely imbecile) became affected in the same way at about the age of 4 years.

V.—GONORRHŒAL AFFECTIONS.

- (1) **Causé, F.**—Metastatic inflammation of the lacrymal gland in gonorrhœa. (*Metastatische Tranendrusenentzündung bei Gonorrhœa.*) *Zeitsch. für Augenh.*, Mai, 1904.
- (2) **Ménétrier.**—Blennorrhagic polyneuritis followed by death. (*Polynévrite blennorrhagique terminé par la mort.*) *Gazette des Hôpitaux*, 21 juin, 1904.
- (3) **Sym, W. G.**—Metastatic gonorrhœal conjunctivitis. *Lancet*, July 16th, 1904, and *Edinburgh Medical Journal*, August, 1904.
- (4) **Druais, Jacques.**—Clinical and bacteriological researches into ophthalmia neonatorum. (*Recherches cliniques et bactériologiques sur les ophtalmies du nouveau-né.*) *Thèse de Paris*, 1904, and *Gaz. des Hôpitaux*, 12 août, 1904.
- (5) **Galezowski.**—Gonorrhœal irido-choroiditis. (*Le irido-choroiditi gonococciche.*) *La Clinica Oculistica*, Gennaio, 1905.
- (6) **De Lapersonne, F.**—Is there such a thing as gonorrhœal iritis? (*Existe-t-il une iritis blennorrhagique ?*) *Archives d'ophtalmologie*, mars, 1905.

(1) **Causé** relates an interesting case of dacryoadenitis which occurred in a young man suffering from gonorrhœa. Four days after the onset of the primary trouble, inflammation and swelling of the conjunctiva were noticed. This did not resemble a gonorrhœal ophthalmia, there being comparatively little secretion, and the swelling being much greater under the upper lid than the lower. No gonococci were found. The swollen gland could be felt beneath the upper lid as a hard tumour about the size of a bean. The condition, which existed on both sides, remained stationary for about a week, and then commenced to disappear; so that in the course of a fortnight the appearance was again normal. The author discusses the etiology of these cases, and is inclined to regard them as being of a metastatic nature (the blood-stream). He thinks, however, that it is the toxins rather than the organisms themselves which get into the blood-stream.

A. LEVY.

(2) A man, aged 46 years, presented one after the other several intense attacks of blennorrhagia, one complicated with orchitis and another with rheumatism. Some months after the beginning of the last attack, numerous gonococci were found in the urethral discharge. It was under these conditions that

paralytic accidents made their appearance. The patient succumbed. The peripheral nerves manifested an alteration affecting all the fibres, characterised by a fragmentation of the myeline. The multipolar cells of the anterior horns of the spinal cord showed chromatolytic lesions.

(3) Sym reported two cases of metastatic gonorrhœal conjunctivitis to the *Edinburgh Medico-Chirurgical Society* on July 6th, 1904. The first patient was a young man who had acquired gonorrhœa three months previously; he had practically recovered under treatment in about two months, but the urethral discharge began again, and almost at the same time several joints became affected and well-marked conjunctivitis, with fairly abundant discharge, came on. The irides were slightly injected also. Synovitis was present of the left ankle and wrist and, to a less degree, of the right wrist also. No bacteriological examination was made. The second patient was a young man suffering from mild gonorrhœa of four weeks duration. Conjunctivitis came on, and was followed by swelling of several joints one after another. Bacterioscopic investigation showed scarcely any organisms, and it was with the utmost difficulty that a few gonococci could be identified. Sym believes that, in all likelihood, the disease is due to toxins generated by the gonococcus. There is, however, an alternative theory, namely, that the original mischief is due to a mixed infection by gonococci and staphylococci, and that the former are unable while the latter are able to penetrate the unbroken epithelial surface of the urethra. That Morax has succeeded in producing a precisely similar form of inflammation by introducing into the conjunctival sac a dead culture of gonococci is a fact strongly supporting the toxic hypothesis.

(4) Gonorrhœal ophthalmia does not constitute more than about one-half of all the conjunctival inflammations seen in newly-born babies. It is rare after the fifth day. It may sometimes be so attenuated as to recall conjunctival catarrh. The existence of corneal complications furnishes the best clinical argument in favour of a given case being due to gonococci. These complications occur most frequently amongst children who are the subjects of hereditary syphilis. Other complications, local or general, are rare. The date of appearance and the clinical form of the disease seem to be without influence upon its development. Non-gonorrhœal ophthalmias appear with equal frequency during the first and second weeks of life. From that time they become rarer and rarer. They usually resemble conjunctival catarrh, but may be accompanied by false membrane, and now and then may simulate gonorrhœal

ophthalmia. They yield much more rapidly to treatment than do the gonococcal cases. Their classification can be established upon bacteriological data only. They may be subdivided as follows:—(a) Conjunctivitis, due to specific pathogenic microbes of the human conjunctiva; they are very rare. (b) Conjunctivitis due to pathogenic non-specific microbes of the human conjunctiva, represented particularly by pneumococcal conjunctivitis. (c) Amicrobic conjunctivitis are the commonest forms, and some of them are connected with hereditary syphilis. **Druais** believes that a bacteriological examination is necessary in order to differentiate between gonorrhœal and non-gonorrhœal forms of ophthalmia. Nitrate of silver—1 : 10 at the beginning of the affection and reduced to 1 : 100 towards the end—is the most efficacious remedy for gonorrhœal ophthalmia, and it may be employed equally well for non-gonorrhœal cases.

H. DE V.

(5) In a clinical lecture **Galezowski** gives a list of the complications concerning the deeper structures of the eye—iris, choroid, and optic nerve—due to gonorrhœa, a disease which is commonly believed to be capable only of producing gonorrhœal conjunctivitis by direct inoculation and arthritis through infection of the system. He brings forward clinical cases to illustrate his theory, *viz.*, that gonorrhœal urethritis is not a local disease but an infectious one, capable of penetrating into the system, attacking, first, the articulations in the form of gonorrhœal rheumatism, and, later, the ocular tissues in the form of iritis, iridocyclitis, irido-choroiditis, and optic neuritis.

CHARLES MANCHÉ.

(6) The net effect of **de Lapersonne's** thoughtful communication is to cast some philosophical doubt upon the existence of a true gonorrhœal inflammation of the iris. He discusses the question from the etiological, clinical, and bacteriological point of view. He admits that the influence of gonorrhœa is considerable, but maintains that it does not act directly upon the tissues of the iris. The iritis is due, in de Lapersonne's opinion, either to a secondary infection with staphylococci or other pathogenic microbes, or else to a lighting up, in some mysterious way, of the rheumatic diathesis.

H. DE V.

VI.—OPERATIONS.

(*Second Notice.*)

- (1) **Vinsolhaler, Frank.**—Extraction of a particle of steel from the eye with the giant magnet. *Annals of Ophthalmology*, October, 1903.

- (2) **Savage, G. C.**—A new advancement operation. *Ophthalmic Record*, November, 1903.
- (3) **Morton, A. Stanford.**—A case operated on for Conical Cornea. *Trans. Ophthalmological Society*, Vol. XXIII, 1903.
- (4) **Schulte.**—Operative treatment of serpent ulcer of the cornea. (Traitement opérative de l'ulcère serpiginieux de la cornée.) *La Clinique Ophtalmologique*, 25 janvier, 1904.
- (5) **Gidney, Captain.**—Symblepharon. *Indian Medical Gazette*, February, 1904.
- (6) **Bywater, H. Haward.**—Iridectomy as a prophylactic measure in Glaucoma. *British Medical Journal*, February 27, 1904.
- (7) **Parinaud.**—The operation for Ptosis. (L'opération du Ptosis.) *Annales d'oculistique*, mars, 1904.
- (8) **Foster, Matthias Lanckton.**—The surgical treatment of Entropion and Trichiasis. *Manhattan Eye and Ear Hospital Reports*, March, 1904.
- (9) **Schultz.**—A simple alternative to extirpation of the lacrymal sac. (Procédé simple pour remplacer l'extirpation du sac lacrymal.) *La Clinique Ophtalmologique*, 10 mars, 1904.
- (10) **Rogman.**—New operation for correcting epicanthus. (Nouveau procédé opératoire pour corriger l'épicanthus.) *Bulletin de la Société belge d'ophtalmologie*, avril, 1904.
- (11) **Paton, Leslie.**—The use of mucous membrane from frog's mouth for grafting in cases of Symblepharon. *Lancet*, 23rd April, 1904.
- (12) **Mazet.**—Keratotomy with conjunctival covering. (Kératectomie avec doublure conjonctivale.) *Recueil d'ophtalmologie*, mai, 1904.
- (12A) **Fröhlich, Konrad.**—On trephining the sclera in painful blindness from glaucoma. (Ueber die Trepanation der Sklera bei schmerzhafter Glaukombindheit.) *Klin. Monatsbl. f. Augenheilkunde*, Mai, 1904, and *Annals of Ophthalmology*, July, 1904.
- (13) **Sureau.**—Blepharoplasty by frontal pedunculated flap in a case of partial traumatic coloboma of the left upper eyelid, complicated by severe septic ulceration of the cornea. Cure, with considerable recovery of vision. (Blépharoplastie par lambeau pédiculé frontal dans un cas de coloboma traumatique partiel de la paupière supérieure gauche, compliquée d'ulcère infectieux grave de la cornée. Guérison avec recouvrement d'une grande partie de la vision.) *La Clinique Ophtalmologique*, 10 juin, 1904.

- (14) **Todd, Frank C.**—Extirpation of the lacrymal sac after injection of paraffin. *Archives of Ophthalmology*, July, 1904.
- (15) **Cirincione.**—Extirpation of the lacrymal sac. (Sull'estirpazione del sacco lacrimale.) *La Clinica Oculistica*, July, 1904.
- (16) **Toti.**—A new conservative method for the treatment of chronic suppurations of the lacrymal sac. (Dacryocystorhinostomy.) *Clinica Moderna* (Florence), 1904, No. 33.
- (17) **Rolston, John R.**—Note on Dr. Landman's wire artificial vitreous. *Lancet*, August 20th, 1904.
- (18) **Emrys-Jones, A.**—A procedure for producing a perfect stump after the ordinary enucleation of the eye. 2^e livraison du recueil des travaux X^e congrès international d'ophtalmologie, Lucerne, septembre, 1904.

(3) A woman, 32 years of age, had suffered from conical cornea for ten years. R.V. = $< \frac{6}{80}$ and No. 1 J. at 2 inches; L.V. = $< \frac{6}{80}$ and No. 2 J. at 2 inches. The apex of each cone was excised. More than twenty years after the operations, V.=No. 1 J. at 12 inches, and (with correction) $\frac{6}{8}$.

(4) **Schulte** has had good results by puncturing the ulcer with a fine galvano-cautery, such as is used in removal of eyelashes.

ERNEST THOMSON.

(5) **Gidney** relates two cases of extensive symblepharon of the lower lid successfully treated by transplantation of mucous membrane from the mouth. Free movement of the lid was obtained in each case.

H. HERBERT.

(7) **Parinaud** discusses the operation for ptosis which he originally described in the year 1897. It essentially consists in establishing an adhesion between the superior rectus muscle and the upper border of the tarsal plate. For details, the original must be consulted.

(8) **Foster** advocates electrolysis as the best means of removing faulty lashes when few in number and when the rest of the margin of the eyelid is in good condition. He says that in cases of spastic entropion which are not relieved by removing the cause of irritation to the orbicularis, measures may be sought which will increase the tension of the skin in such ways as to offer a sufficient resistance to the action of the orbicularis muscle; or through interference with the action of the muscle itself maintain the margin of the eyelid in a normal position. For cicatricial entropion he prefers Celsus' operation with the addition of anchorage of the lower flap of the skin to the upper border of the cartilage, with the implantation of a wedge-shaped graft of mucous membrane. JOHN T. KRALL.

(9) **Schultz** has had satisfactory results from occlusion of the puncta in cases where it is desired that the conjunctiva should not be infected from the sac. In his first case it had merely been his intention to occlude the puncta as a temporary measure and to extirpate the sac later. He found to his surprise that when fluid no longer reached the sac from the conjunctiva the dacryocystitis subsided. The method consists in applying the glowing galvano-cautery for about two seconds to 4 mm. of each canaliculus. ERNEST THOMSON.

(10) Between the semilunar border which bounds the epicanthus on the outside and the median line, **Rogman** cuts a cutaneous strip in the form of an inverted V, in such a manner that the lower extremities of the two branches of this figure reach to the level of the internal angle of the eye, or a little lower. He then extends the external branch of the incision downwards, in such a manner as to outline the internal edge of a second strip, in the form of an upright V of which the summit bestrides the semi-lunar margin, and of which the external branch is continued upwards on the ocular side of the fold up to the level of the internal angle of the eye. After having set the two strips free, they are crossed and then fixed by sutures. The strips are easily juxtaposed: there is no traction, and all the existing constrictions are removed.

H. COPPEZ.

(11) A patient, 31 years of age, developed an almost complete adhesion of one lower lid to the eyeball, after an attack of severe orbital cellulitis. Under these circumstances, **Paton** prepared three flaps from the roofs of several frogs' mouths, and after dissecting the lid from the eyeball, fastened them into place, using sutures for the purpose. A piece of green protective was pushed into the sac, and the eye was closed and bandaged. Six months after the operation, the appearance of the eye and its movements were almost normal. "The above case shows," says Paton, "that where extensive mucous membrane grafts are required, the readily available frog can be brought in to spare the mucous membrane of the patient's own mouth."

(12) **Mazet** is of opinion that his method of abscission has advantages over those of Critchett and Panas. He dissects back the conjunctiva round the cornea for 1 centimètre, as if for peritomy. He then excises the cornea 1 millimètre from the limbus, and through this opening removes the iris and lens. Vertical sutures are next inserted through the cornea and conjunctiva, and tied quickly, so as to avoid loss of vitreous.

J. JAMESON EVANS.

(12A) D. Argyll Robertson (*Ophthalmic Hospital Reports*, Vol. VIII, p. 404) appears to have been the first surgeon to recommend scleral trephining in certain cases of glaucoma. Fröhlich now describes his experiences with this operation, which he performed in the following way: two incisions, each 10 mm. to 12 mm. in length, were made through the bulbar conjunctiva, one along the lower border of the external rectus and the other along the external border of the inferior rectus muscle. The limbal connection of this more or less triangular flap having been severed, the flap itself was dissected from the sclera, and turned back towards the equator. By means of von Hippel's trephine, provided with a 5 mm. crown, a disc of sclera was removed, but the choroid and the retina were not interfered with. Lastly, the conjunctival flap was replaced and retained in position by means of several sutures. The five cases of blind and painful eyes, with high tension, treated in this way by Fröhlich, recovered in ten to fourteen days. All, except one, were successful. The failure, the author thinks, was due to the trephine being pushed through all the membranes, whereby a profuse hæmorrhage (extra- and intra-ocular) was produced. Should the operation of trephining the sclera prove inadequate to relieve pain and tension, Fröhlich recommends evisceration, in the performance of which he has made some modifications—as, for example, cutting the tendons of the recti muscles, leaving the cornea *in situ*, using no sutures, and tamponing the scleral sac with wool or gauze “until it has resumed its original spherical form.” S. S.

(13) Sureau describes at considerable length a case in which a kick from a horse resulted in division of the upper lid. This injury was not properly attended to at the time and resulted in great deformity, and eventually in corneal ulceration which called urgently for operation. After twelve days occupied in cleansing the field of operation, during which time the cornea was kept constantly lubricated with yellow oxide ointment, Sureau did a tarsorrhaphy as a temporary expedient, and followed it up with a blepharoplasty by single large flap from the forehead. Four diagrams illustrate the communication.

ERNEST THOMSON.

(14) After alluding to the technical difficulties attending extirpation of the lacrymal sac, Todd describes the operation devised by him. The contents of the sac are first squeezed out, and the sac itself is then irrigated with boric lotion and argyrol, after which paraffin of a melting point of 110° F. is injected through the canaliculus, in order to distend the now empty cavity. The sac is exposed, and dissected out by means of knife, dull instruments, and scissors. Finally, the skin is sutured, and the canaliculi destroyed by cauterization.

(15) **Cirincione** criticises Aubaret's procedure in cases of chronic dacryocystitis. The chief feature of Aubaret's proposal (*see THE OPHTHALMOSCOPE*, Vol. II, p. 532) is to drain freely the cavity left after removal of the sac by taking away a part of the lacrymal bone. Cirincione points out that if the operation of extirpation is properly performed, no drainage should be necessary. He emphasises the need of dealing with the mucous membrane of the duct, and prefers to remove it in its entirety. If this be done and the canaliculi be cauterised, there is no fear of suppuration, and union is always obtained by first intention.

HAROLD GRIMSDALE.

(16) **Toti's** method aims at curing the suppuration in cases of purulent dacryocystitis and restoring the flow of tears into the nose by establishing free drainage through a "large, easy, short, direct, and permanent" communication between the lacrymal sac and the anterior part of the middle meatus of the nose. He considers that previous attempts on the same lines have failed because the communication established was too small itself or opened into an anatomically or pathologically constricted space. The steps of the procedure are:—(1) Remedy by appropriate measures any obstruction in the anterior part of the middle meatus of the nose. (2) Make an incision down to the bone parallel to and a few millimeters from the orbital margin. (3) Strip the periosteum from the nasal process of the superior maxilla and the lacrymal groove, and turn outwards the entire flap, including the tendon of the orbicularis and the lacrymal apparatus. (4) Resect a piece of bone including part of the nasal process of the superior maxilla and the entire breadth of the lacrymal fossa, exposing the nasal mucous membrane without wounding it. (5) Make a round or oval opening in the internal wall of the lacrymal sac and a similar but somewhat larger opening in an exactly corresponding position in the exposed mucous membrane. (6) Plug the anterior part of the middle meatus lightly with iodoform gauze, and suture the skin wound, using every endeavour to obtain union by first intention. Toti quotes one case which he has treated by this method with the result that from the time of the operation a large purulent pocket of the internal angle of the eye disappeared completely, so that not the smallest drop of pus or tears could be expressed through the canaliculi, and there was absolutely no lacrymation. The case, however, is a very recent one, and he can bring forward no evidence as to whether the good result will be permanent. Contrasting his operation with a somewhat similar one recently described by Aubaret (*see p. 532*, Vol. II, 1904), Toti points out, among other distinctions, that the two procedures

differ radically in principle, as he endeavours to provide an artificial passage for the tears by establishing a communication between the lacrymal sac and the middle nasal meatus, while Aubaret does not aim at making such a passage, but removes the sac and makes the opening into the nose to provide drainage for the cavity left by its ablation. R. J. COULTER.

(17) **Rolston** has employed Landman's wire spheres in some ten cases of excision, and finds that they are readily inserted into Tenon's capsule, that they cause little irritation, and, finally,



that the ultimate results as regards movement are satisfactory. The spheres are light, made of pure silver wire, and, as shown by the illustration, are of three sizes. They are manufactured by Messrs. Down Bros., London, S.E.

(18) **Emrys-Jones** has obtained an excellent result with an operation devised some eighteen years ago by W. Adams Frost,* namely, the introduction, after ordinary enucleation, of a glass sphere into Tenon's capsule and the subsequent suturing of the conjunctiva.

VII.--FAMILY DEGENERATION OF THE CORNEA.

- (1) **Veasey, Clarence, A.**—Report of two cases of family macular degeneration of the cornea. *Archives of Ophthalmology*, September, 1904.
- (2) **Spicer, W. T. Holmes.**—Nodular opacities of the cornea in father and daughter, with a history of the same in the father's brother and sister. *Trans. Ophthalm. Society*, Vol. XXIV (1904), p. 42.
- (3) **Fleischer.**—Four cases of family degeneration of the cornea. (Demonstration von vier Fällen familiärer Hornhautdegeneration.) *Die Ophthalmologische Klinik*, 20 Juli, 1905.

(1) **Veasey** reports in a brother and a sister two cases of degeneration of the cornea, which he regards as identical with those described by Fehr (*see* THE OPHTHALMOSCOPE, June, 1904, p. 241). The facts of the cases are as follows: *Case No. 1.*—A man, aged 41 years, began to experience trouble

*Middlemore Prize Essay, 1886.

with his eyes about the tenth year of life. On examination, sight equalled No. 12 Jaeger and 15/200. Corneæ diffusely hazy, with numerous greyish-white spots and maculæ, the opacity being more marked towards the centre. With a magnifying glass, the diffuse haze was found to resolve itself into hundreds of minute dots, in the midst of which were found maculæ of various sizes and shapes. The diffuse haziness and the maculæ were more pronounced near the centre of the corneæ. Surface of corneæ smooth; sensation unimpaired. Subjective symptoms practically absent. The corneal condition was slowly progressive. *Case No. 2.*—A female, aged 43 years, the sister of the first patient. Sight began to fail about the twelfth year of life. When examined by Veasey, V. = No. 14 Jaeger and 1/50. Corneal conditions similar to but more advanced than those described in the first patient. There were four other brothers and sisters in the family, but their eyes manifested no morbid changes.

(2) **Spicer** reports one of those rare cases where so-called "nodular" opacities were present towards the centre of the corneæ in a girl, aged 23 years. The sight, with myopia corrected, was almost normal. The patient's father, aged about 50 years, showed a similar condition of the corneæ, except that the nodules were arranged in short lines, which formed a kind of network by crossing one another. Furthermore, there was a history of similar corneal changes in two other members of the family, *viz.*, in the paternal aunt and uncle of the original patient.

(3) Of late years several authors have described peculiar forms of corneal degeneration, the chief characteristic of which is the tendency to appear in families. Haab has described one of the forms as "lattice-like" keratitis; Groenouw and Fuchs another as "nodular" keratitis. Fehr names one condition, quite similar to that last-mentioned, "fleck-formed corneal degeneration"; and Doyme and Stephenson in a recent communication (*THE OPHTHALMOSCOPE*, May, 1905) speak of "family degeneration of the cornea." In a work just published Wehrli describes the disease as "lupus corneæ." According to **Fleischer**, all the various forms may be grouped under one head, of which individual genera are merely varieties. All have features in common. They run, for instance, an eminently chronic course; they affect the central parts of the cornea; and, for the most part they attack several members of the same family. As special forms of disease may be distinguished the "lattice-like" keratitis of Haab, the "nodular" corneal opacity, and the "fleck-formed" corneal degeneration of Fehr.

At a meeting of the Württemberg Medical Society, held on May 28th, 1905, Fleischer demonstrated four cases of the variety last-mentioned in two pairs of brothers, J. and J. B. K., and M. and S. M., all rather over 40 years of age. J. B. K. and S. M. had seen badly from youth, and the former had suffered from recurrent attacks of inflammation of the eyes. J. K. had been a soldier, but was discharged from the service on account of his defective sight. M. M., now 45 years of age, was a soldier, and eleven years ago he first remarked a diminution in his power of sight. In the family K. two female members, 41 and 43 years of age respectively, nieces of the above-mentioned, suffered from the disease, a fact confirmed by personal examination. Further, two of S. M.'s children, aged 13 and 8 years, a boy and a girl, manifested an early stage of the corneal disease.

Both pairs of brothers suffer from the same type of disease. With the exception of a clear peripheral zone, the whole of the cornea is occupied by a diffuse opacity, which when magnified, can be resolved into little points, between which are deposited, in all layers of the cornea, coarser greyish-white streaks, partly confluent. The surface of the cornea is slightly elevated and glancing. The pupils react to light. Details of fundus indistinct. The power of sight is considerably reduced in all the patients (counting fingers at a distance of several metres). All four patients are remarkable on account of a certain leanness, poor state of nutrition, and pallid complexion. J. F. S.

VIII.—MYOPIA.

- (1) Seggel.—The cause and significance of myopia. (Ueber die Entstehung und Bedeutung der Kurzsichtigkeit.) *Klin. Monatsbl. f. Augenheilk.*, 1904, p. 244.
- (2) Widmark, J.—The occurrence of myopia in the higher schools of Sweden. *Hygiea*, Juli, 1904.
- (3) Seggel.—Affection of the light-sense in myopia. (Schädigung des Lichtsinns bei dem Myopen.) *Von Graefe's Archiv f. Ophthalmologie*, LIX. i., 9 August, 1904.
- (4) Koster, W., G'zn.—Optotypes for the determination of the sight of myopic eyes in their punctum remotum. (Letterproeven ter bepaling von den visus bij myopic in het punctum remotum.) *Neder. Tijdschrift v. Geneeskunde*, 1904, No. 12.
- (5) Frenkel, H.—On the relation between myopia and corneal opacities. (Sur les rapports de la myopie avec les taies de la cornée.) *Annales d'oculistique*, T. CXXXII, p. 174, septembre, 1904.

- (6) **Bourgeois**.—Traumatic myopia, due to forward displacement of the lens. (*Myopie traumatique, par propulsion du cristallin en avant.*) *Ann. d'oculistique*, T. CXXXII, p. 279, octobre, 1904.

(1) **Seggel** briefly alludes to the view of Stilling, who distinguishes two forms of myopia : (1) arising from lengthening of the sagittal axis of the eye through muscular pressure ; (2) arising from hydrophthalmia. According to Stilling, myopia is specially frequent in conjunction with a low orbital index and breadth of vision (deep situation of the trochlea, pressure of the musc. obliq. sup. on the bulbus.) Seggel considers the cause of "school myopia" to consist in muscular pressure, especially of the musc. rect. int. and ext. He takes a different view from Stilling in regarding this form of myopia as seriously injurious, whereas Stilling looks on it as a mere accommodation and non-injurious.

A. BIRCH-HIRSCHFELD.

(2) **Widmark** examined a college at Djursholm, a little villatown close to Stockholm, and found that among its 151 pupils myopia did not exceed 4 per cent. Only one pupil was myopic more than 1 D. (— 1·25). These figures are much less than those for Stockholm and Sweden on the whole. The more favourable conditions at Djursholm do not depend on less work in the school, or on a more hygienic schoolhouse, but probably on more opportunities for the children of playing and sporting in open air during their recreation. Other schools situated in larger towns have too few and inadequate playing grounds. The author accentuates the fact that myopia has very much decreased in the Swedish schools during the last twenty years. In some schools in Stockholm when examined 1883-1887 the percentage of myopia rose to more than 50 in the highest class. But the year 1900 the proportion of myopia in the highest class of all colleges in Sweden (16,745 pupils) were only 19·5. This considerable improvement is probably due partly to the amelioration of the hygienic conditions in the schools, partly to the greater inclination of the Swedish youth during the two last decennaries to bodily exercises and play in the open air, and partly also to the reduction of the study of Latin and Greek in the schools. The Swedish colleges are generally divided in two parallel lines, the humanistic and the realistic one. In the former Latin and Greek are studied, in the latter more mathematics, chemistry, and physics. Now the proportion of students in the realistic line has considerably increased during the last two decennaries. But, as is shown by statistics, the students on the realistic line are much less affected by myopia than those of the humanistic one. The reading of Latin and Greek seems much more strain on the eyes than the study of mathematics,

physics, and chemistry. Especially the reading of Greek with its quite different types and the searching of vocables in the dictionaries with their small types is very trying for the eyes. The author reports some researches as to the frequency of myopia among medical students in Stockholm, who, when in college, all belonged to the humanistic line. Among the students in the dissecting-hall 28 per cent. were myopic, with an average of 2.25 D; among the students at the ophthalmic clinique 37 per cent. were myopic, with an average of 2.72 D. Among the lady-students 30 per cent. were myopic with an average of 6.25 D., and two of them were afflicted with central choroiditis on the one eye. These figures confirm the observation, previously made in Sweden, that with the same schoolwork the girls are more affected than the boys with myopia or at least with its higher degrees.

J. WIDMARK.

(3) **Seggel** was the first to draw attention to the fact that the light-sense shows a marked decrease in all forms of myopia, even if not accompanied by visible ophthalmoscopic changes. In his latest contribution he refers to the examination of nearly 300 school children, and finds his former surmises amply corroborated. Most impaired is the faculty of central perception of light as tested with Treitel's test (a modification of Förster's photometer), in which he uses a small white square of 3 mm., instead of Förster's black lines and notes—the smallest aperture of the diaphragm, 3 mm. in a normal eye—necessary for its determination. Seggel finds that even very small degrees of myopia lead to decrease of perception of light, which attains exceedingly low figures in the higher forms of myopia ($\frac{1}{2}$ of the normal between 7 and 9 dioptries). Decrease of vision in failing light is a well-known symptom of declining age, but this must, of course, be much more marked if, as in myopic subjects, this failing of the light-sense dates from the years of youth. It is also important to know that the hemeralopia in myopics is least troublesome in reading, which remains satisfactory even in bad light, while they experience great difficulty in finding their way in the twilight. Hypermetropics, on the other hand, require strong light for reading, not because they are hemeralopic, but so as to derive the benefit of a contracted pupil. Seggel concludes that his results revealing diminished light-sense in even low myopia prove that myopia implies a morbid affection of the neuro-epithelium, and that therefore its progress and spreading should be checked by all possible means.

R. GRUBER.

(4) To measure the sight of myopic eyes in the remotest point there exist small optotypes by Pflüger and also by Bjerke.

Koster did not find these very satisfactory, so he tried to get better results by photographing on glass; the difficulty was to reduce print to a sufficiently small size and yet get clear and sharp photographs. The letters must be very small indeed, for to measure full sight in the p. 2 of a myope of 20D., the letters must not exceed 0.075 mm. (for they should be seen at 5cm. under an angle of 5 minutes). A series of these optotypes is now ready. They are photographed on glass, protected by a metal frame, and should be read against the sky. Their distance from the eye can be measured on a metal rod, along which a small visir is movable. The letters are so small that a non-myopic examiner cannot control the patient's reading. Therefore, the same letters have been photographed on a larger scale for the ophthalmic surgeon's use. The apparatus may be had from Mr. Brouwer, mechanician to the Ophthalmic Institute of the University of Leiden.

G. F. ROCHAT.

(5) **Frenkel** has carefully examined a series of 1,350 cases of corneal opacity, with a view to ascertaining the relationship between this condition and myopia. From an analysis of his results, and of the statistics previously published on the subject, he draws the following conclusions: (1) in at least one-third of the cases in which they are present central corneal opacities produce myopia, which tends to be progressive and to be associated with lesions of the fundus. (2) Bilateral corneal opacities usually cause bilateral myopia. When the leucomata are unilateral, the myopia is usually unilateral, the eye affected being, as a rule, that which is used by choice for near vision. (3) The age of the corneal opacities appears to have some connection with the degree of the myopia. (4) In addition to irregular astigmatism, corneal opacities produce an astigmatism which can be measured, which averages 1.5 D. to 2 D., and which is a factor in the causation of the myopia. (5) The myopia caused by leucomata is axial and not due to changes in the corneal curvature. (6) To the diminution in vision due to the corneal opacities is added, in course of time, a further impairment resulting from increase in the myopia and from fundus changes. (7) The mechanism of the causation of this form of short sight is similar to that of all other forms of acquired myopia, but in addition to the mechanical causes, the influence of extension of inflammatory processes to the posterior segment of the globe, and of the relationship between the intra-ocular tension and the corneal resistance, are worth consideration in certain cases. (8) With regard to the question as to whether acquired myopia is due to the effort of accommodation or of convergence, the observed cases of unilateral leucomata

associated with unilateral myopia appear to have depended on accommodation, but the problem is too complex to be solved without more extensive researches. (9) The occurrence of myopia as a result of leucomata calls for fresh endeavours to prevent or to cure as rapidly as possible all forms of keratitis. (10) Patients with leucomata should have their refraction accurately corrected, and careful attention should be paid to ocular hygiene, with a view to checking the progress of the myopia.

R. J. C.

(6) **Bourgeois** records three cases in which blows on the eye caused marked decrease in the depth of the anterior chamber, accompanied by permanent myopia with diminished visual acuity even after correction with glasses, and attacks of increased tension. In one of these cases an iridodialysis also followed the injury, and the eye had to be removed owing to the rapid development in it of a sarcoma. Bourgeois thinks that this tumour had commenced to form before the occurrence of the accident and helped to cause the iridodialysis, and considers that ocular traumatism accompanied by myopia which did not previously exist should be regarded as very serious.

REVIEWS.

The Arris and Gale Lectures on the Neurology of Vision.

By J. HERBERT PARSONS, B.S., D.Sc., F.R.C.S., Assistant Ophthalmic Surgeon, University College Hospital; Curator, Royal London Ophthalmic Hospital. London: HODDER & STOUGHTON. 8vo., pp. 70. 1904. Price 2/6.

These lectures, delivered in the theatre of the Royal College of Surgeons, contain the results of the patient research of a distinguished histologist on the afferent visual paths and upon the innervation of the pupil. Both lectures present to the reader an almost complete history of the subject with which they deal, the only fault being that, as nearly every statement made has been hotly contested, it is difficult for the reader to decide, with such imposing names on each side, which is to be relied on as correct. Gradually, however, owing to the improved means of investigation at the disposal of the enquirer, problems that appeared to be insoluble have been attacked and overcome, and the means by which this has been accomplished are the study of the coarse anatomy of the parts in man and different animals, the application of the microscope, the effects of section in producing loss of function and degenerative changes, and of embryology in the observation

of the process of development, and especially the occurrence of myelinisation of nerve fibres. In tracing the course of the visual sensory paths by each of these methods, the author is in accord with the views of Ramon y Cajal, that there are three links in the sensory visual chain. The first is situated in the retina itself, and is represented by the bipolar cells which form the chief part of the inner nuclear layer of the retina. These neurones send axons outwards which are probably connected with several rods and cones, and internally send axons which arborize over the cells in the ganglionic layer. These constitute the neurones of the first order. The neurones of the second order are represented by the ganglion cells, the axons of which extend from the retina through the optic nerve, chiasma, and optic tract to the optic thalamus, pulvinar, and external geniculate body, and the anterior corpus quadrigeminum. The third link, or neurones of the third order, extends from these points to the cortex of the brain at the apex of the occipital lobe, and in particular to that part which is in immediate relation with the calcarine fissure. The author describes the results of his own experiments, in which a slender Graefe's knife was carried across the eye through the vitreous and made to inflict a small wound in the opposite equatorial or macular region of the retina. In three weeks the animal was killed, and the course of the fibres that had undergone degeneration was carefully followed by serial sections of the optic nerve. They were seen to form a well-defined group, the position of which was dependent on the site of the injury. Further back the fibres formed a less well-defined group. In the chiasma they decussated with those of the opposite side, and in the optic tracts they became more and scattered as they reached their destination. The details of these experiments, which are both interesting and original, are supplemented by an account of the visual centres in the cortex of the occipital lobe as given by y Cajal and Bolton.

The second lecture is devoted to the subject of the innervation of the pupil. Mr. Parsons has no hesitation in admitting the existence of a dilatator muscle, the nervous supply of which he assigns to the cervical sympathetic. He gives a good description of the results of recent research upon the course of the nerves implicated, in the following terms: "The dilatator nerve tract probably commences in the neighbourhood of the nucleus of the third nerve in the mesencephalon, passing through the medulla oblongata, where its exact path is still unknown, into the lateral columns of the cord. The fibres leave the cord by the ventral roots of the first three thoracic nerves, enter the rami communicantes, and run to the

first thoracic or stellate ganglion. From here, they, for the most part, pass into the anterior, though to a small extent into the posterior, limb of the annulus of Vieussens. Continuing their course they run up the neck in the cervical sympathetic to the superior cervical ganglion. From here the dilator tract enters the skull by cervico-Gasserian strand, running independently of the carotid plexus. After joining the Gasserian ganglion it becomes attached to the first or ophthalmic branch of the fifth nerve, accompanies the nasal branch which it leaves finally to enter the long ciliary nerves, thus avoiding the ciliary ganglion. These penetrate the globe near the optic nerve and, running between the sclerotic and the choroid, pass through the ciliary body and are distributed to the iris." This is a good condensed account of the present state of our knowledge of the motor tracts to the sphincter and dilator muscle. The motor tract for the sphincter pupillæ commences at the nucleus of the third in the floor of the aqueduct of Sylvius; passing forward as part of the third nerve it enters the branch which supplies the inferior oblique, and leaves that branch by the short root of the ciliary ganglion. From this the fibres run as the short ciliary nerve piercing the globe round the optic nerve, and run in the choroid and ciliary body to the iris. Mr. Parsons adduces a very large body of evidence tending to prove the existence of pupillo-dilator fibres. The subject has had great attraction for experimenters, especially because different effects were obtained by different investigators operating after the same fashion. To increase the complexity of the phenomena, secondary causes of movements of the pupil have to be taken into consideration, as, for example, the accommodation synkinesis, or the contraction of the pupil associated with accommodation, the sensory reflex or dilator reflex induced by pathic, tactile, and other sensory stimuli; the cerebral synkinesis induced by psychic stimuli, as fear and anger, or by mere concentration of thought on darkness or light. His own experiments on the cat and dog show that dilatation of the pupil can be obtained by stimulation of a considerable area in the neighbourhood of the crucial sulcus, especially on the mesial surface of the hemisphere, as well as from a large area in the occipital region, especially in the posterior suprasylvian convolution. There is a phenomenon not mentioned by Mr. Parsons, but familiar to every operator, and very suggestive of constriction of the pupil being due to vascular distension or to a kind of erection, that on the escape of aqueous after withdrawal of the cataract or iridectomy knife, the pupil instantly contracts, as though the removal of the normal intraocular pressure permits the numerous radiating vessels to

become filled with blood. Is this closure of the pupil due to stimulation of the constrictor or to inhibition of the dilator muscular fibres?

Mitteilungen aus der Augenklinik in Jurjew.—Herausgegeben von Prof. Dr. TH. VON EWETZKY. Heft 2. Berlin, 1905. Verlag von S. KARGER, pp. V. and 119. Reports of the Ophthalmic Institution in Jurjew.—Edited by Prof. VON EWETZKY. Part 2.

Jurjew appears to be a small town of the Department of Kostroma, Russia in Europe, having a population of three or four thousand, and situated on the right bank of the Volga, about 30 miles N.W. of Nishni Novgorod.

The essays contained in the present volume are six in number. The first is written by Dr. J. Rubert, of Swenigorodna, who has had large experience of leprosy in Livonia, and has published a work on leprosy generally, from which an excerpt is now taken dealing with the ophthalmoscopic appearances present in this disease. Many observers have been unable to perceive any affection of the fundus. Dr. Nieden, of Heidelberg, in reply to a letter of enquiry from Dr. Rubert, stated that in the cases he had seen in Norway, Madeira, and Turkey he had chiefly noticed the external manifestation of leprosy in the conjunctiva and lids, and only rarely observed iritis and choroiditis. No mention was made of retinitis. Dr. Rubert himself carefully examined the eyes of 202 cases of leprosy that fell under his observation, and found 47 cases in which the fundus was affected—that is, about 23 per cent. Of these, 16 were males and 31 females. In 33 out of the 47 cases the form of the disease was tubercular; in 14 maculo-anæsthetic. The number must, he thinks, have been much greater, because the fundus could not be examined in consequence of the disease of the lids and anterior tunics of the eye. Dr. Rubert classifies his cases and arranges them in the following groups: 1. Those with choroiditis disseminata. These presented white spots of atrophy in the peripheral regions, which were consequently only visible with the pupil dilated and in the inverted image. Sometimes reddish or yellowish, ill-defined areas, in which the pigment failed, or was present in small quantities only, were visible. The size of these spots varied from that of a pin's head to eight times the diameter of the disc. The lower external quadrant was the most frequently, the lower internal quadrant the most rarely, affected, and in the latter cases only in common with other parts of the fundus. Pigment may surround the areas or even appear within their limits, or may be distributed in the form of minute points. He had seen no instance of masses

of pigment, such as is often seen in syphilitic choroiditis. The course of the disease is tolerably favourable, and in only one case was there any complications; in that one case the vitreous was turbid, and the whole fundus hyperæmic. The patients made no complaints; the fields were normal; the visual acuity and the colour-sense also were nearly normal. In fifteen cases of this group, the disease was unilateral in eight cases and bilateral in five. In three cases the media were too obscure for any conclusions to be drawn. A detailed description of the condition of the eyes in many of these cases is given, showing that the lids were either swollen or atrophic and shrunken. There were lagophthalmia and ectropion, blennorrhœa, often of the lacrymal sac, haziness of the cornea, old iritis with synechiæ, and other changes. 2. The second group includes the cases defined as *degeneratio pigmentosa retinae*, and characterised by an atypical retinitis pigmentosa, presenting disseminated small pigment spots situated in the periphery of the retina which have a tendency to coalesce, and, speaking generally, resembles the appearance seen in hereditary syphilis, or exhibiting small whitish points of miliary lepromata. In five patients, the disease was bilateral in three. Four of the five suffered from hemeralopia; the field of vision was more or less restricted. Two were affected with *lepra maculo-anæsthetica*, one with *lepra tuberosa*; the vision was $\frac{1}{4}$. The real seat of the disease was probably in the vascular coat and not in the retina, which is secondarily affected. 3. The third group is retinitis, in which small rounded or oval plaques of yellowish-white colour with a blush of red upon them are seen. All of these cases were colour-blind to a greater or less extent, especially for green, which the patients thought was blue. The plaques are in all probability small lepromata. 4. This group included those presenting changes in the retinal vessels, such as endarteritis and endophlebitis, constriction and interruption of the arteries, alternate dilatation and constriction (of rare occurrence, only two cases occurring in the 47 patients) of the veins in their course. 5. Changes in the optic nerve-neuritis; and, lastly, 6. Haziness of the vitreous, the opacities consisting of moving flocculi. Of all these changes the only lesions that Dr. Rubert believes to be specially associated with, and characteristic of, leprosy are the small miliary white spots, and these he regards, although without confirmatory microscopical evidence, to be lepromata.

The second article in this part of the *Reports* is by Dr. Adolf Engelmann, of Alexandrovsk, and is entitled "Tonometric investigations in healthy and in diseased eyes." The instrument used was the tonometer of Maklakow with slight modification, the details of which he gives. He commences his researches with the comparison of the tension of the eye of one side of a

rabbit with that of the other side immediately after ligature of the carotid. He finds the normal tension of the adult rabbit's eye amounts to 32 mm. Hg. After the ligature had been applied the tension began at once to fall, and in the course of half-an-hour had reached its lowest point, 23·8 mm. Hg. In three days the tension had gradually recovered itself, and had become normal or equal to that of the other eye. Experimenting on the human subject, he first tried the effects of Valsalva's experiment (full inspiration, followed by attempted effort to expire with closed glottis, pulse curve shows first increase then decrease of general blood pressure) and found the tension of the globe rose at first from 24·5 mm. Hg. to 38 mm. and then sank to 34 mm. A second trial made immediately after showed a rise to 35 mm., and a subsequent fall to 23·8 mm. Hg. before expiration. The intraocular tension therefore follows the variations of the blood pressure. He next examined the tension during muscular effort, the effort being made by extending an elastic band fastened to the foot whilst the tension of the eye was taken with the man in a recumbent position. The blood pressure rose from 134 to 175 mm. Hg. in a few minutes; the tension of the globe rose in the same time from 23 mm. to 30 mm. Hg. In two minutes both the blood pressure and the eye tension had returned to the normal. The effect of chloroform narcosis was to cause a fall of ocular tension of 13 mm. Hg. in 15 minutes, and some time elapsed before a return to the normal height was restored. Stimulation, or exsection of the superior cervical synpathetic cord, or ganglion, caused rapid fall of tension in rabbits, and in two cases in which he had the opportunity of observing the tension of the globe in one the tension fell slowly for three days, from 25·4 mm. Hg. to 19·2 mm., and long remained below the normal amount; in the other, it fell during the first day, rose considerably on the ninth day, but finally remained below the normal. In glaucoma, the intraocular tension was 34 mm. Hg. before the operation. After the operation it sank 4 mm. Fluctuations between 29 mm. and 38 mm. (11th day) took place and on the 15th day it was normal. Other experiments showed that the size of the pupil did not exert the smallest influence on intraocular pressure. Strong contraction of the orbicularis muscle was able to increase the pressure 13·7 mm. Hg. Strong efforts at convergence and accommodation raised the pressure about 3·4 mm. and in one case 7·7 mm. The condition of the tension in various diseases is then given. It was normal in conjunctivitis, retinitis, neuritis optica, in complicated cataract and in anomalies of refraction. In all cases of *ulcus corneæ*, the intraocular pressure was lowered, the extremes being 2·6 and 7 mm. Hg., and the same was observed in *keratitis pannosa*, *phlyctenulosa*, and *parenchymatosa*. It was lowered 10·7 mm. in a case of *episcleritis*

of 4 weeks' duration. In iritis and iridocyclitis it was in one case normal, but, as a rule, it was increased in the first stages and lowered in the more advanced period of the disease. In glaucoma, he had the opportunity of taking the pressure in 25 cases, the average was found to be 52 mm. Hg. and the highest was 92 mm. In from 5 to 13 days after iridectomy the tension had fallen 17 mm. to 33 mm. below its previous condition, and was occasionally subnormal. In cataract the tension was always lowered to about a third of its normal amount a fortnight after the operation. It was diminished in cases of detachment of the retina. The numbers given in this article, though not, perhaps, universally correct, are still of value as having been taken by the same observer using the same instruments.

The third article in the *Reports* is by Theodor Werncke, of Odessa, and deals with the tumours of the eye and of the adnexa. It includes cases of lymphangioma cavernosum orbitæ, endothelioma bulbi; endothelioma palpebræ with cavernous structure; endothelioma glandula lacrymalis, with cavernous structure. The diseases are illustrated by figures in the text, and there is a good bibliography.

The fourth article is by the same author, and is devoted to the consideration of aniridia completa congenita bilateralis.

The fifth article is a research by Gerhard Hollmann on the changes in the fields of vision after a debauch on wine (and tobacco). Some of the subjects seem "to have done themselves pretty well"; of one we read he consumed at one sitting 3 schnapps, 5 glasses of strong grog, 10 bottles of beer, and smoked 75 cigarettes, containing 5 grains of tobacco in each; of another, that from the 27th November at noon to midnight on the 30th, with some intervening hours of sleep (12), he consumed 45 schnapps, 60 bottles of beer, 3 bottles of wine, 150 cigarettes, and 10 cigars. The ophthalmoscopic appearances were few and slight, consisting only in slight hyperæmia of the optic disc and a slight constriction of the field of vision; a slight confusion of the red and green was observed. It is gratifying to know that this gentleman, when examined by Dr. Hollman, considered himself "all right."

The sixth and last article is by Sesüliniski on the changes in the field of vision after poisoning with nitro-benzol and nitrous oxide (Central scotoma and restricted field of vision for colours.)

HENRY POWER.

The Diagnosis and Treatment of some common diseases of the Rectum and Anus. By CECIL H. LEAF, M.B. (Cantab.), F.R.C.S. (Eng.) Price 3/6.

In his preface the author states that this little book is intended as an introduction to the larger text-books on diseases of the rectum. The book starts with a description of the surgical

anatomy of the rectum and anus. In the second chapter, which is devoted to a description of the methods of examination, the author rightly advises the Sim's position on the left side, but his description of the way to get the patient into this position is somewhat difficult to follow. The methods of treating hæmorrhoids, fistula, carcinoma, and some of the other conditions of the rectum frequently met with, are clearly described, and some of the more common operations for these affections are briefly given.

We wish the author had not thought it necessary to use italics in such profusion, and that the book had not been printed on such very inferior paper.

The book is not complete enough to be of much value to the general practitioner or student.

The Practical Medicine Series of Year Books: Comprising Ten Volumes on the Year's Progress in Medicine and Surgery: issued monthly. Under the general editorial charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, Volume III. The Eye, Ear, Nose and Throat, Edited by CASEY A. WOOD, C.M., M.D., D.C.L., ALBERT H. ANDREWS, M.D., and GUSTAVUS P. HEAD, M.D., Series 1905. Chicago: The Year Book Publishers, 8vo., pp. 332.

This series of books, which is published primarily for the general practitioner, is so arranged in separate volumes as to offer opportunity to those who are interested in special subjects to buy only the parts they desire.

The volume before us constitutes a brief epitome of the most important literature upon the eye, ear, nose, and throat that has appeared during the year 1904. The special part, edited by Casey A. Wood, includes mention of all the most interesting advances that have been made in ophthalmology during that period of time. The work can be heartily recommended.

C. A. O.

NOTES AND ECHOES.

ON the 13th July last, a distinguished representative of ophthalmic surgery, Mr. John Tweedy,

News Items. was re-elected President of the Royal College of Surgeons of England. Dr.

S. Golovine has been appointed to the Chair of Ophthalmology in the University of Odessa. Dr. C. O. Saunte has been recognised *privat-docent* of ophthalmology in Copenhagen. Dr.

Victor Picot has been nominated *oculiste adjoint* to the hospitals of Bordeaux. Dr. Debève has been appointed *chef de clinique* in the eye department of the University of Lille, France. MM. Monthus and Cantonnet have been appointed to similar positions at the Hôtel-Dieu, Paris. There have been several changes in the staff of Wills Eye Hospital, Philadelphia. Dr. McCluney Radcliffe, formerly surgeon, has been appointed by the Board of City Trusts executive officer for one year; Dr. Horace G. Goldberg has been appointed pathologist, and Dr. G. William Schlindwein resident surgeon, each for a period of one year. Dr. Guende has been appointed professor of clinical ophthalmology at Marseilles.

* * * *

DR. JOSEF BRETTAUER, the well-known
Recent Deaths. ophthalmic surgeon of Triest, died on July
 11th last from broncho-pneumonia at the age
 of 70 years. His contributions to the literature of ophthalmology
 were both numerous and important. Dr. L. A. Prefontaine,
 ophthalmologist to Mercy Hospital and Springfield Hospital,
 Mass., succumbed to Bright's disease on June 19th at the early
 age of 39 years. The death is announced, at the age of 63 years, of
 Mr. William Curry, senior member of the firm of Curry and
 Paxton, the well-known opticians. The deceased gentleman
 started the business in Great Portland Street nearly thirty years
 ago in association with Mr. Picard. Mr. Curry, whose death was
 painfully sudden, took a prominent part in the public affairs of
 Marylebone. He was a member of the now defunct Vestry and
 of the local Board of Guardians, besides holding the office of
 churchwarden at Trinity Church. His character was one of
 singular amiability. Mr. Curry leaves a widow and seven
 children to mourn his loss. To his bereaved family THE
 OPHTHALMOSCOPE tenders sincere sympathy.

* * * *

THE following have been appointed officers
 of the section on ophthalmology for the
 ensuing year:—Chairman, L. H. Taylor;
 Vice-Chairman, W. H. Wilder; Secretary
American Medical Association.
 A. E. Bulson, junior.

A New Society.

A NEW society, with the name of the Eastern Illinois Ophthalmological and Otological Society, was recently inaugurated at Danville, Illinois. Dr. Cassius M. Craig, of Champaign, was elected president, and Dr. Charles P. Hoffman, of Danville secretary.

* * * *

Hungarian Trachoma Prize.

THE commission appointed by the Hungarian Minister of the Interior to adjudicate upon the best trachoma essay, has recently given its decision. The prize, it will be remembered, was one of 2,000 crowns. It was felt by the commission that no single essay deserved the full amount offered. But the sum of 1,000 crowns was awarded to Professor Kuhnt for his communication, although the judges pointed out, in so many words, that the essay contained nothing absolutely new. At the same time it was felt that Professor Kuhnt had rendered signal service to the study of trachoma by subjecting to the actual tests of the operating room the manifold surgical methods of treating the disease that have been advocated time to time.

* * * *

Ophthalmology in St. Petersburg.

WE gather from a recent number of the *Lancet* that the Women's Medical Institution has again requested a subsidy from the St. Petersburg Town Council for the founding of an eye clinic, and that the request will probably be granted on condition that the clinic is opened for the population in accordance with the requirements of the city medical adviser.

* * * *

Optician sued for Damages.

A SOMEWHAT peculiar case is now occupying the attention of the Law Courts in New York. A retired naval surgeon, Mr. William F. Arnold, is claiming \$3,000 damages from a jeweller for having permanently injured his eyesight. Complainant stated that when in service in the Philippines he lost the sight of one eye, while that of the other was greatly weakened. To preserve the sight of the remaining eye, Dr. Arnold declares that he was compelled to wear glasses with lenses ground to a compli-

cated formula. On 1st June, 1905, he left a pair of gold-rimmed spectacles to be repaired, and impressed the defendant with the necessity of exactly replacing the lens according to the originally prescribed adjustment. The defendant, it was alleged, ignored these instructions and the prescription, and adjusted the lenses so that the sight of Dr. Arnold's remaining eye was impaired, so that he was unable to attend to his ordinary occupations. Whatever the upshot of this case, it seems to us that it would be difficult to prove that the plaintiff's impaired vision was not due to progressive changes in the structure of the eye, rather than to injury resulting in so short a time from an improper lens. In any event the case hinges upon simple negligence. Had the optician prescribed the spectacles, as he might well have done on this side as well as on the other of the Atlantic, he would indeed have placed his head in the lion's mouth, for the law could not recognise the diploma of a City company as conferring the right to surgical practice.

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ORIGINAL COMMUNICATIONS.

A FAMILY WITH IRIDEREMIA.

BY

T. K. HAMILTON, M.D. (UNIV. DUB.), F.R.C.S.I.

OF ADELAIDE, SOUTH AUSTRALIA.

No. 1.—H. J., aged 36 years. Seen on November 9th, 1902. Vision has always been defective. His right eye has never been of much use to him, as long as he can remember, until lately. One son, dead, whose eyes were defective like his father's. No consanguinity in previous generations, and no defect of vision that he knows of.

Right Eye. Iris apparently wanting, but it is difficult to be quite sure whether or not there is a rudimentary ring of iris at the extreme periphery, as an opacity of the cornea and some vessels obscure the view in this region. No reflex of the anterior part of the lens or of the posterior pole to be obtained; nor are the ciliary processes to be seen. Numerous opacities of the vitreous. Optic discs small with ill-defined margins; retinal vessels small. Field: concentrically contracted for all

colours, especially on the temporal side, which scarcely exceeded that of the nasal in dimensions. Vision : $+ 11.0 \text{ D. } \odot + 2.0 \text{ D. ax. } 180^\circ = \frac{6}{12} ? ? ? ? + 16.0 \text{ D. } \odot + 2.0 \text{ D. ax. } 180^\circ$ No. 1 J. (with difficulty). *Left Eye.* No iris to be seen. Lens : opacities all over and adenser opacity of the outer and lower part of the periphery. Fundus reflex obtainable, but no details to be made out. Vision : $- 3.50 \text{ D. } = \frac{6}{36} ?$ and No. 1 J.

Ptosis both sides, most marked on the left side, in which eye the upper lid covers nearly one-half of the cornea. The patient throws his occipito-frontales muscles into action, in order to raise the lids. Corneæ small, in keeping with the other parts of the globes, both of which are microphthalmic, the horizontal diameters measuring about 9.5 mm. Nystagmus both sides, regular and slightly less during accommodation. Urine.—Sp. gr. 1010. No albumen or sugar. *February 5th, 1903.*—V. of right as before. Left fingers at 0.50 m. Lens becoming uniformly opaque. P.I. seems perfect. *March 10th, 1905.*—Left, lens opaque. Ordered for right the above correction in a reversible frame.

No. II.—H. S., female, aged 16 years (elder daughter of previous patient), examined on June 29th, 1903. Vision has always been defective. Ptosis both sides, more than half of the corneæ being covered. She throws the occipito-frontales into action when she tries to open the eyes wide ; both then open a very little more, and the globes roll upwards. Nystagmus in both, slow and irregular, somewhat less in the right than the left eye. The movements increase when she converges, and when prisms, base downwards, are placed before the eyes they also increase. Converges up to the tip of the nose, but tendency of left eye is to deviate outwards. No photophobia, even when strong light is thrown into the eye with the mirror. Width of palpebral fissures, 28 mm. ; interpupillary distance, 5.5 c.m. Corneæ 10.5 mm. in horizontal, and 10 mm. in vertical, diameter ; a zone of deep vessels on upper and lower border of each cornea. Irides :—right, a small peripheral rim on the outer side only ; left, a somewhat wider rim on the inner side with undulations here and there. Lenses :—both slightly dislocated upwards, the lower margin of each being 1.5 mm. from the bottom ; several small opacities seen on the anterior part of the right lens ; the media are otherwise clear. Fundi :—discs pale, margins indistinct, and vessels small.

Vision : { Right $\frac{1}{8} ? - 2.0 \text{ D. } \odot + 4.00 \text{ D. ax. } 90^\circ \frac{1}{8} ?$ and No. 1 J. at 25 c.m.
 { Left $\frac{3}{8} - 1.0 \text{ D. } \odot + 2.00 \text{ D. ax. } 90^\circ \frac{3}{8}$ and No. 1 J. at 15 c.m.

Fields :—marked concentric contraction for all colours, right somewhat the smaller. Nose and naso-pharynx normal. Hard palate high-arched. Head measurement around the temples, 53

c.m. Teeth, two upper canine and lateral incisors are irregularly marked. Patient ordered the above correction in amber-tinted lenses.

No. III. H. V., female, aged 13 years (youngest daughter of the first patient). Examined June 29th, 1903. Has always had bad sight. Right eye less prominent than left. Upper lid covers about one-third of the cornea; and there is, therefore, very little, if any, ptosis; muscles of globe act normally; slight horizontal nystagmus in both, which is increased by prisms, bases downwards, and during accommodation—convergence; eyes orthophoric, no deviation. Width of palpebral fissures: right, 28 mm.; left, 27 mm. Interpupillary distance 5.2 c.m. Cornea: right horizontal and vertical diameter 10 mm., left 11 mm. Measurements of orbits: both eyes horizontal diameter 3.75 c.m., vertical 3 c.m. Corneæ: vessels around the periphery of each cornea with a wider rim of opacity above than below. Irides: none visible. Lenses: both dislocated upwards about the same as her sister's. Several small opacities on the anterior surface of each lens, and one opaque spot on the equator of the left. Fundi: conditions similar to sister's eyes.

Vision $\left\{ \begin{array}{l} \text{Right } \frac{6}{18} + 2.0\text{D. } \frac{6}{18} \text{ and No. 1 J. at 15 c.m.} \\ \text{Left } \frac{6}{18} + 1.5\text{D. } \frac{6}{18} \text{ and No. 1 J. at 15 c.m.} \end{array} \right.$

No photophobia. Fields: concentric contraction of both for all colours. Nose: nostrils symmetrical; palate of normal shape; face not symmetrical, temporal and malar regions flatter on right side than on left; head measurement round the temples 53 c.m. Teeth: the enamel broken on the four upper incisors, and the upper bicuspid stunted. Ordered full correction in amber-tinted lenses.

No. IV.—H. H. male, aged five years (youngest surviving child of first patient). Examined on February 5th, 1903. Born with defective formation of irides. No nystagmus; corneal diameter, 11 mm.; no vessels or opacities of limbus; width of palpebral fissures, 25 m.m.; globes rather flat, but not small. Irides.—Right: coloboma nearly straight inwards; base equal to about $\frac{1}{4}$ of the circumference of the cornea, this being the widest part of the colobomata, the lower pillar thrown into folds, no iris to be seen in the coloboma. Left: coloboma about same size and shape as right, and a narrow rim of iris at its base, continuous with the lower pillar, which also is thrown into folds. Lenses: several "dot" opacities on the anterior part of lenses near the bases of the colobomata; media otherwise clear; and fundus normal.

No. V.—H. E., female, aged 28 years, (wife of first patient and mother of the children). Examined on November 24th, 1903.

Her eyes have never been strong, and lately she has found it difficult to use them long together, as they ache, and frontal headaches come on.

Vision { Right + 3.5 D. $\odot$ + 1.0 D. ax. 180° } $\frac{5}{8}$
 { Left + 3.0 D. $\odot$ + 1.0 D. ax. 180° } $\frac{5}{8}$
 Nov. { Right + 2.50 D. $\odot$ + 1.0 D. ax. 180° } $\frac{5}{8}$ and No. 1 J. at
 27th { Left + 2.0 D. $\odot$ + 1.0 D. ax. 180° } 25 c.m.
 No. 2—Hyperphoria. Abduction 10° .
 No. 3—Insufficiency Externi. Abduction.

Remarks.—The first four of these cases form an interesting group, since they furnish a fairly complete clinical picture of the various conditions usually found in irideremic eyes. An account of the mother's eyes is added merely in order to complete the record.

In each of the cases the irides seem to be partly or wholly absent, and in the eyes where no iris can be seen it is possible that a rudimentary development does exist, but the narrow uveal rim is sometimes hidden from clinical observation by the corneal margin, which is obscured by opacity and vessels. If this be so, it would help to reconcile the statements of Brose with those who claim that no iris exists in many cases. This authority states, that although many of the reported cases of irideremia present the appearance of total iris absence, yet, in the few cases that have come to a *post-mortem* examination, a rudimentary development of the iris, at least, was always found (*Arch. Ophthal.*, Vol. XXII, p. 71). Under these circumstances, neither of the terms "aniridia," nor "irideremia," as applied indiscriminately to all these cases, is strictly or anatomically correct, although of the two, the latter is probably the better one to use.

The marginal changes of the corneæ referred to as present in Cases Nos. I, II, and III, are probably variations of the condition designated by Von Ammon as the *fatal ring*. That the ciliary body sometimes takes the place of the iris is suggested by the observation of E. Treacher Collins, who has reported two cases in which this body formed the rudiment (*Ophthalmic Review*, March, 1891).

Microphthalmia is the usual accompaniment of irideremia. All these cases point to the association of the two conditions, small and ill-developed globes throughout, and not only that, but faulty development of the cranium, upper jaw, etc. The high-arched palate and non-symmetrical upper jaw in Cases Nos. II. and III. illustrate the co-existence of these associated abnormalities.

Arrested development of the iris is also known to be associated with defect in the permanent teeth, a condition to which Griffith

has drawn attention (*Trans. Ophth. Soc.*, Vol. XVIII, p. 190). In Cases Nos. II. and III. the dental enamel is defective, and in neither case can the condition be traced to any dyscrasia, such as inherited syphilis or rickets.

Lenticular opacities seem to be the rule in these eyes, terminating in complete cataract, as the patient advances in life. I have had the opportunity of watching a case of this kind in a man whom I first saw when he was 58 years of age. There were then fairly dense opacities of each lens and a decided nucleus in each. The patient was a sea-faring man, and had been for years the master of a small coasting craft. Despite the lental and vitreous opacities with irideremia, he was still able to use the sextant and do everything else which his calling required from him. I watched the progress of the case for eight years, and at the end of this time his lens opacities were practically unaltered, and his vision remained almost the same. Hence, the progress of these cataract formations is sometimes, even in an old man, exceptionally slow. There is also, in many cases, a tendency to increase of tension, causing glaucoma. Frost records a case in which one drop of a solution of homatropine promptly precipitated an attack of glaucoma in an irideremic eye (*Ophthalmic Review*, Vol. XXII, p. 177) which may, according to Priestley Smith, be due to the imperfect development of the anterior system of lymphatics in these otherwise faulty eyes (*Trans. Ophth. Soc.*, Vol. VIII, p. 276).

That there was dislocation of the lenses upwards in Cases Nos. II. and III. does not seem to admit of any doubt. Very careful examination pointed distinctly to luxation, and that the abnormality was not due, as Priestley Smith says it sometimes is, to a malformation and not to a dislocation of the lens. "The tendency to upward luxation in congenital irideremia," says Foster (*Arch. Ophthal.*, Vol. XXVII, p. 600) "is very noticeable as well as the absence in any cases of dislocation directly inwards or outwards."

The direction and shape of the colobomata in Case No. IV. is most interesting, as it is so very unusual to find a congenital coloboma situated anywhere but below, but in this case the defect was directly inwards, and was almost symmetrical as to position and size in each eye. The shape of the colobomata is also worthy of note. The bases were the widest part in each case, while in the ordinary congenital coloboma the base is always the narrower part.

The absence of photophobia in such cases is apparently the rule. Even prolonged examination with the ophthalmoscope does not seem to cause as much annoyance to the patient as is frequently met with in the examination of eyes

with normal irides. In these cases the influence of lenticular and vitreous opacities can hardly be great, since these were not dense enough to shut out the light to any extent from the eyes. It is more likely to be due to an abnormal lack of sensibility on the part of the retinal elements, which also accounts for the degree of amblyopia that existed in three of the cases in which refraction was estimated and proper correction ordered. This defective visual acuity is apparently always found in irideremic eyes. The presence of nystagmus, which is also a pretty constant symptom, and which was present in three out of the four cases, may be not only an evidence of low visual acuity, but also be a factor in causing or in increasing the defect. In all three cases this symptom appeared in somewhat a different form. In No. I. it was regular and slightly less during accommodation. This may be accounted for by the patient having only one eye and that an aphakic one. In No. II. it was slow and irregular, somewhat less in one eye than the other, approaching the condition of unilateral nystagmus which is sometimes met with, and increased during accommodation, and when prisms, base downwards, were placed before the eyes; and in No. III. it was horizontal, regular, and increased during accommodation, and when prisms before the eyes. From case No. IV. it was absent.

Perhaps the most interesting feature in these cases is the occurrence of the somewhat rare disappearance of a cataract by spontaneous, or the so-called "intra-capsular," absorption. From the history of Case No. I the lens must have become opaque early in life and have remained so until the patient had reached at least 30 years of age. There had been no injury; examination of the urine excluded glycosuria; and the present condition of the eye is against the cataract having been of the Morgagnian type, which degeneration is supposed to be the first stage of spontaneous disappearance of cataract. The eye, so far as the lens is concerned, is now quite free from all remains of the lens or its capsule, and the vision, taking into consideration the type of eye and the vitreous opacities, is remarkably good. It has fallen to my lot to see only two other cases of spontaneous absorption, one of which occurred in a man aged 59 years, upon whom I had performed a preliminary iridectomy, and at the same time had broken down some posterior synechiæ. The patient disappeared for twelve months, and did return at the usual time for the extraction of the lens. On his return he informed me that seven weeks after the operation his vision began to improve, and as the improvement continued he did not come back. When examined at the end of twelve months, there was nothing to be seen but some floating opacities

in the anterior part of the vitreous, and his vision, with correction, was $\frac{6}{8}$ and No. 1 J. Slight iridodonesis was present.* The other case occurred in a man, aged 67 years, whose left eye had been quite blind from complete opacity of the lens. When I first saw him the lens had been nearly all absorbed, and nothing remained but some capsule attached to a shrunken lens, which was about 3 m.m. in diameter. Two operations were undertaken—the first to remove the capsule, and the second, some weeks afterwards, to extract the shrunken lens. These were successfully performed, leaving the media clear, except for some opacities in the anterior part of the vitreous. The matured lens in the other eye was removed about six months afterwards, thereby restoring vision in both eyes.

That heredity is a predisposing factor in the etiology of irideremia, these cases afford abundant evidence. Every member of the family has shown some defect, the deceased son included. Up to the present only one generation has suffered. It will be interesting to see if this younger generation transmits the tendency. There are many cases on record which go to show that successive generations are affected. "This," as Foster remarks, "tends strongly to exclude what may be termed environmental causes, and rather to indicate a hereditary tendency on the part of the formative powers of the fœtus not to develop the iris."

Lastly, a word about the method of correcting the vision in these cases. Amber-tinted glasses were ordered for cases Nos. II and III. Seabrook, in a paper read before the Ophthalmological Society of New York (*Ophth. Record*, Vol. XXXII, 390), recently drew attention to the advantages of these tinted glasses, which he designates "the ray filter for white light." He claims for them that they allow the light rays to pass through freely, the heat rays partially, and they eliminate the actinic rays, these last being the element of white light which causes chemical inflammation and irritation of eyes. He also mentions that yellow is used as a standard for determining the index of refraction, and that yellow glass corrects the chromatic aberration of eyes and dulls dazzling reflections by cutting off the blue-violet rays. I have employed these glasses for several months now, and I can testify to their usefulness. I have found in their use a most satisfactory and hitherto unattainable method of dealing with a large group of cases whose symptoms seem to depend upon retinal hyperæsthesia. They have put within our reach a scientific method of dealing with many cases for which we have hitherto been using the so-called "smoked" glasses, and which we now recognize to be as unscientific as the amber-tinted glasses

* I have recorded this case in the *Aust. Med. Gazette*, Vol. XV, p. 393.

are the reverse. For cases like these under consideration, amber glasses supply a want, and the two patients who are now wearing them are as comfortable as any glasses can make them. Moreover, they do away with the necessity of wearing stenopæic glasses, or glasses with an iris-diaphragm such as Königshöfer (*La Clinique Ophthal.*, octobre, 1901) recommended for irideremic eyes, albinos, etc.

IS THE USE OF ELECTRIC LIGHT INJURIOUS TO THE HUMAN EYE?

BY

E. F. DRAKE-BROCKMAN, F.R.C.S., Eng.

This question has presented itself to me for some months past, and it appears to me to be a subject worthy of further investigation in these days when electricity is so much used for the illumination of public buildings and private houses.

Cases have come under my observation of impairment of vision, for which I can attribute no cause other than the systematic use of electric lighting. These have been principally in young persons at schools where electrical installation obtains. In the cases to which I am about to refer, I have, for obvious reasons, avoided naming the schools. In the last of these cases, however, *viz.*, in that of a person of mature age, the electric light was used in his private house as well as in the club he frequented. Hence the impairment of vision cannot well be ascribed to other causes which might be operative in younger subjects.

I have not had the opportunity of testing experimentally, either on the lower animals, much less on the human subject, the influence of electric light on the optic nerve and the retina, and my suspicions in this regard have been merely raised by clinical observation of the cases here recorded.

In Vol. II, page 166, of THE OPHTHALMOSCOPE, will be found an abstract of an article (originally published in the *Archives d'Ophtalmologie*, avril, 1904), by Ed. Mettey, entitled "Experimental Researches upon Injury of the Eye produced by the Electric Light," and the article concludes with these words: "It may be assumed that the human eye exposed to electric light comports itself as does the eye of rabbits and dogs under similar circumstances. Slight cases of electric dazzling, where recovery is the rule, are due to reparable lesions. On the other hand, severe cases, accompanied by diminution or loss of visual functions, are due to irreparable retinal lesions, leading to descending degeneration

of the fibres of the optic nerve. No definite statement can be made as regards the particular rays that cause the mischief."

Sufficient evidence is to be found in the current medical literature of the day pointing to the injurious effects upon the skin and structures developed from the epiblast when these have been exposed to the X-rays, and it may be concluded that similar injurious effects are liable to be caused to the retina and the optic nerve fibres when exposed to the influence of electric light as an illuminating agent in ordinary every-day work. In using electricity, it seems to me, we are dealing with a force of the properties of which we have a limited knowledge, and that it is not unreasonable to fear that in the ordinary lighting of rooms by electricity, and more so in schools, etc., some rays may act injuriously on the retina and optic nerve fibres, as they undoubtedly do on the skin structures. In the quotation above made E. Mettey remarks: "no definite statement can be made as regards the particular rays which cause the mischief."

I began this short paper with a question, in order that others, more capable than myself, may feel disposed to throw more light, by their investigations, upon a subject which appears to me to be obscure.

A very instructive and interesting paper on "Chronic X-ray Dermatitis," was read by Dr. J. Hall-Edwards, at the Section of Dermatology at the Annual Meeting of the British Medical Association, at Oxford, which may be seen on page 994 of the *British Medical Journal*, dated 15th October, 1904, and in that paper it is stated that "the rays (X-rays) have an influence upon the nervous system, but further clinical observation is necessary before their exact action can be learned."

My cases are as follows:—

Case 1.—G. D., *æt.* 20 years, brought to me on 26th September, 1901, by his father, for impairment of vision in reading and study. A student at a large public school where electric lighting obtains. Vision steadily failing.

Both eyes with $\begin{smallmatrix} -1D \\ -5C. 30^{\circ} \end{smallmatrix} = \frac{1}{4}$

Conjunctivæ congested; eyes easily irritated by exposure to electric light. Advised to abandon study by electric light, and to use a good kerosene lamp or candles. At a subsequent visit to me he stated that he had acted on my advice, and that all inconvenience had ceased.

Case 2.—C. M. A., *æt.* 18 years, brought to me on 24th April, 1904, by his father. A student at a large public school. Studying for the Army, and obliged to work by electric light. A well-developed healthy lad, and an athlete. Has

lately experienced increasing difficulty at his evening work. A small degree of myopia,—1 D. in each eye. Advised to study at nights by lamp or candle light.

In June all difficulties had disappeared by adopting the means suggested. Passed successfully into Woolwich.

Case 3.—H. R. L., *æt.* 13 years, brought to me on the 3rd May, 1904. At school he studies at night by electric light. Acuteness of vision diminishing, with irritation of eyes, epiphora, and conjunctival congestion. Refraction normal. A collyrium of boric acid and cocaine prescribed, and all study by electric light to be given up.

10th August.—All symptoms removed, and is quite well.

Case 4.—A. C., *æt.* 13 years, brought to me in November, 1903. Complains of inability to do his evening studies by electric light, which causes lacrymation, irritation in the lids, etc. Refraction normal. Is at a public school. A boric acid and cocaine collyrium advised, and the discontinuance of study by electric light.

28th April, 1904.—Has quite recovered.

Case 5.—A. L., *æt.* 10 years, at a large public girls' school, brought to me on 26th September, 1904. Studies and plays the piano in the evening by electric light. Has weeping of eyes, fatigue, with conjunctival congestion of both eyes. No lacrymal obstruction. Refraction normal. Advised treatment as in the last two cases.

Case 6.—T. W., *æt.* 69 years, came to me in March, 1904, in great distress regarding his diminishing power of reading at night. Has lately introduced electric lighting into his house, and frequents a club which is supplied with electric light. Has never experienced difficulty in reading by artificial light until lately; he is myopic; no lenticular opacity. Conjunctivæ congested, and exposure to electric light causes irritation in the eyes with lacrymation. He is a great reader. The necessary glasses were prescribed, and he was advised to avoid reading by electric light and to use a lamp or candles.

After following my instructions for a month T.W. returned to tell me that all his difficulties had been removed.

WELBECK STREET, W.

CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

A CASE OF PARALYTIC STRABISMUS FROM FRACTURE OF THE SPHENOID BONE.

BY

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P.F., 33 years, Irish, foreman of gravel train. Admitted to surgical service of Moses Taylor Hospital, May 14th, 1901.

On the day previous to admission, while at work with his train, his head was caught between the buffers of two cars. He was dazed for a time, but soon recovered consciousness, and was taken home. He remained conscious for several hours, but then became wildly delirious, and was controlled only by large doses of morphine. His friends said that he had only bled from the ears, but the skin wounds around them complicated this point.

On admission to the Hospital he was in a condition of alternating stupor and delirium. The delirium was of the active, fighting kind, and required the restraint of several orderlies. The axillary temperature was 100° F. Pulse 120. Respiration 28.

Examination showed a man of large frame and fine muscular development. The upper part of the right pinna was torn from its attachment, and over the zygoma there was a punctured wound through which no bone could be felt, and there were no external signs of fracture on this side. There was considerable clotted blood in and around the right auditory meatus, and a watery discharge coming apparently from the meatus.

Above and behind the left ear there was considerable hematoma, with blood-clot crepitus, and though the deceptiveness of the edge of a blood-clot was kept in mind, it was considered that the edge of a depressed fracture could be felt at this point. There was no muscular paralysis. Pupils were mid-wide and equal. No ocular paralysis was to be detected in the unconscious patient.

Immediate operation was performed to elevate the supposed depressed fracture. A flap of the soft parts was reflected, but no fracture was found after complete examination of the temporal fossa and its vicinity. As from the absence of

paralysis and the general condition of the patient a rupture of the middle meningeal artery did not seem probable, the wounds were sewn up. The wounds healed *pro primam*.

After the operation the patient remained in the same condition of alternating stupor and violent delirium until the third day, when his mental condition gradually became normal. The temperature reached 105° F. per rectum, on the second day from which it fell, but continued between 99° F. and 101° F. for two weeks. During his delirium the urine had to be drawn by catheter and the bowels moved by croton oil. His condition was at times so poor as to require free stimulation. The serous discharge from his right ear continued, and after a time became purulent.

On the 7th day it was first noticed that there was an internal strabismus, which gradually increased in degree. The patient was troubled with double vision. This disappeared after a time although the strabismus remained marked. Hearing was much impaired.

May 28 (14 days after the accident.)—Paralysis of external recti. Left ear hears watch on contact only. Right ear does not hear watch on contact even, and the purulent discharge continues.

June 28.—Patient has returned to work on his gravel train. Double vision is present at times only, and does not interfere with his work. Paralysis of external recti unchanged. Left ear: hearing is normal. Right ear: no hearing, and discharge continues, but is diminished.

November 24.—Discharge discontinued in right ear; hears watch at contact. Membrane of tympanum thickened, light grey in colour, and scarred. Vision O.D. $\frac{1}{3}$ ⁵. Acty. D. 1.00 $\frac{1}{16}$. O.S. $\frac{1}{3}$ ⁵, Act. D. 1.00 $\frac{1}{8}$. Pupils active, equally dilated. Media clear, veins dilated.

AN OPHTHALMOSCOPIC LAMP.

BY

J. T. GRADON, M.A. (OXON).

The hand-lamp (on page 493) has been devised to facilitate the examination of the eye by the direct method. Very little practice is needed to acquire the art of combining the movements of the lamp and mirror, so as to survey the fundus with great rapidity.

Briefly, the apparatus consists of a vertically half-obscure electric lamp enclosed in a japanned box with double walls to floor and lid, by means of which ventilation is obtained without allowing light to pass through the perforations. But when total darkness is not required the lid may be thrown back, as the spring ferrule which is pushed on to the socket of the electric lamp after this has been placed in position in the box, provides a rest for the latter.



Three shutters are provided with light holes of various sizes, for muscle tests and exercises. A candle holder is also supplied to take the place of the electric lamp, when required.

The price, with lamp holder and two yards of flexible cord, costs 21s., and can be obtained from Messrs. Newbold & Co., 72 & 74, Gray's Inn Road, London, W.C., who have made arrangements for inspection and trial at their factory.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—THE PUPIL.

- (1) **Stoewer.**—A case of atrophy of the optic nerve in diabetes ; together with some remarks on reaction of the pupil under trans-illumination of the sclera. (Ein Fall von Sehnervenatrophie bei Diabetes nebst Bemerkungen über Pupillarreaktion bei Durchleuchtung der Sklera.) *Klin. Monatsbl. f. Augenh.*, 1903, Bd. II, p. 97.
- (2) **Bouchart.**—The centres and reflex paths of the pupil. (Centres et voies reflexes de la pupille.) *L'Ophthalmologie Provinciale*, mai, 1904.
- (3) **Parsons, J. Herbert.**—The innervation of the pupil. *Royal Lond. Ophth. Hosp. Reports*, Vol. XVI, Pt. I.
- (4) **Frenkel, H.**—La mydriase à bascule ou l'inegalité pupillaire à bascule. *Archives d'ophthalmologie*, septembre et octobre, 1904.
- (5) **Bartels, M.**—The pupil in the new-born. (Pupillenverhältnisse bei Neugeborenen.) *Zeitschrift für Augenheilkunde*, November, 1904.
- (6) **Wolff, H.**—On the diminution of the sensitiveness of the pupillary reflex from the macula to the periphery of the retina (Ueber die Abnahme der Pupillarreflex-Empfindlichkeit der Netzhaut von Zentrum nach der Peripherie.) *Zeitschrift für Augenheilkunde*, November, 1904.
- (7) **Bach, L.**—The behaviour of the pupil in convergence and accommodation. (Der Verhalten der Pupillen bei der Konvergenz und Akkommodation.) *Zeitschrift für Augenheilkunde*, Dezember, 1904.
- (8) **Münch, Karl.**—On the anatomy of the dilator of the pupil. (Zur Anatomie des Dilator pupillæ.) *Zeitschrift für Augenheilkunde*, Januar, 1905.
- (9) **Bach, L.**—On centres and paths concerned in the pupillary reflex. (Ueber Pupillenreflexcentren und Pupillenreflexbahnen.) *Zeitschrift für Augenheilkunde*, März, 1905.
- (10) **Bach and Meyer.**—On the relationship of the fifth nerve to the pupil, and to the ciliary ganglion. (Ueber die Beziehungen des Trigeminus zur Pupille, und zum Ganglion ciliare.) *Zeitschrift für Augenheilkunde*, März, 1905.

- (11) **Wessely, K.**—The effect of adrenalin upon the pupil and the intraocular tension. (*Zur Wirkung des adrenalins auf Pupille und Augendruck.*) *Zeitschrift für Augenheilkunde*, April, 1905.

(1) A man, 34 years of age, who was suffering from diabetes (7 % sugar), became affected with simple atrophy of the optic nerve. The temporal half of the field of vision was absent; the sense of colour in the nasal half was normal. **Stoewer** attributes the affection to vascular changes in the optic nerve. He recommends the trans-illumination of the sclera (as used by Leber for determining the presence of intra-ocular tumours) in examining the hemianopic reaction of the pupil.

A. BIRCH-HIRSCHFELD.

(2) **Bouchart** gives a description, largely founded on the work of Bach*, of the various pupillary reflexes and their paths.

(3) **Parsons'** communication is a highly technical one, dealing with the nerve supply of the pupil. It is taken as proved, chiefly from physiological experiments, that there are dilator fibres present in the iris, and that they are supplied by branches of the sympathetic nerve. The first plate shows in a diagrammatic way the efferent pupillo-constrictor and pupillo-dilator paths, and the course they run from the centres in the brain.

Given constrictor and dilator fibres, each with its own independent nerve supply, together with radially disposed blood vessels, it is clear that constriction of the iris may be due to (1) contraction of the constrictor muscle; (2) relaxation of the dilator muscle; (3) dilatation of the blood vessels. In a similar manner dilatation of the pupil may be produced in the reverse manner. There is much evidence to show that all three of these methods may bring about this effect.

Then follows an account of the large amount of work that has been done on this subject by different observers.

With regard to paradoxical pupillo-constriction which occurs sometimes after the tonic impulses are cut off by section of the constrictor path in any position, the conclusions of Anderson are given, that this condition is due to increased excitability of the denervated sphincter probably set up by alterations of the blood supply.

The efferent pupillo-dilator path presents more difficulties and the results of experiments are more ambiguous. A long account of the work that has been done on this subject is then given, together with all the references.

**Zeitschrift für Augenheilkunde*, Februar, 1904.

Several observers have held that there are both dilator and constrictor fibres in the 5th nerve, but Braunstein and Hurwitz may be taken to have proved their absence, and it has also been definitely proved by Langley, Anderson, and the author that all the dilator fibres run in the cervical sympathetic.

Paradoxical pupillo-dilatation is then considered. This is sometimes seen after removal of the superior cervical ganglion of the sympathetic, when after the application of eserine, any slight dyspnoea will, in kittens, cause almost complete dilatation of the pupil on the side on which the ganglion has been removed, and a similar condition may be produced if the pupils are contracted by strong light instead of eserine. The great accentuation of this under an anæsthetic does not occur until dyspnoea is produced.

No attempt is made to unravel the tangle of speculations as to the reflex pupillary centre; the number of centres that have been with the greatest assurance described by different observers is bewildering in the extreme. There is, however, very conclusive evidence in favour of the supreme importance of the third nerve nucleus.

The accommodation synkinesis is a constrictor effect commonly associated with accommodation, although it is more nearly related to convergence. Very little is known about this phenomenon, although it has been recognised since the time of Scheiner (1619).

The sensory reflex is a dilator reflex induced by tactile, pathetic and other sensory stimuli. Anderson found that well-marked dilatation could be obtained by stimulating the sciatic nerve, etc., after the pupillo-constrictor tract was divided, but all this was abolished if the cervical sympathetic were cut in addition to the third nerve. The same thing was noticed with regard to hippus.

Cerebral synkinesis is a complicated affair and not a simple reflex. This is carefully gone into and the results of the author's experiments are given. It is a difficult paper to abstract, and the original should be read by those interested in the subject.

C. D. M.

(4) **Frenkel** has a long article upon what may be termed "see-saw mydriasis," a condition known in Germany as *Springende Mydriasis*, and in France as *mydriase à bascule*. The author insists upon the necessity of illuminating the pupils equally before making a diagnosis of see-saw mydriasis. Von Graefe (1857) was the first to describe the condition, which has been observed in certain diseases of the central nervous system—as, for example, general paralysis, insanity, locomotor ataxy, disseminated sclerosis, chronic cervical

myelitis, infantile cerebral paralysis, and hydrocephalus. Each one of these factors is considered at length by Frenkel. See-saw mydriasis may be also met with apart from affections of the central nervous system. Thus, it has been reported in cases of pleurisy, pneumonia, chronic catarrh of the stomach, chronic nephritis, hepatitis, typhoid fever, pulmonary phthisis, hysteria, neurasthenia, exophthalmic goitre, etc. Frenkel is doubtful whether the condition ever occurs in perfectly healthy people, despite the cases published by Magnus, Iblitz, and Miklaszewski. It appears that under certain conditions see-saw mydriasis may be provoked experimentally. According to Piltz, these conditions are : (1) an inequality of the two eyes with respect to reflex excitability to light ; (2) a difference in the accommodation ; (3) inequality of the contraction to the pupils by contraction of the orbicularis. To these Frenkel adds (4) abolition of the reflex to light with insufficiency of convergence affecting one eye.

Frenkel has reached the following conclusions as to see-saw mydriasis. A distinction must be drawn between the phenomenon as provoked by the conditions of observation and as arising spontaneously. The former is as common as the latter is rare. The spontaneous form is always due to excitation of the ocular sympathetic, affecting now one side and now the other. It may be accompanied by enlargement of the palpebral fissure on the same side as the mydriasis. It may be of organic origin, as in affections of the central nervous system; be a consequence of lesions of the sympathetic in the neck ; or may be of functional origin. The provoked form may be met with whenever the reflex excitability of the pupil to light, to accommodation, or to convergence, or the contraction of the orbicularis palpebrarum, is more feeble on one side than the other. If it is true, as Frenkel is inclined to believe, that spontaneous see-saw mydriasis is not found in healthy people, then it is obvious that its presence has a certain diagnostic value.

S. S.

(5) **Bartels** investigated the following points: (1) the average size of the pupil in the ordinary daylight; (2) the maximum dilatation and contraction of the pupil which could be obtained by diminishing and increasing the intensity of the light; (3) the time of the reaction and its amplitude; (4) the behaviour of the pupil to sensory impulses; and (5) the behaviour of the pupil to atropine. His conclusions were: (1) the average size of the pupil was from 2.5 mm to 3.25 mm, a point in which the pupils of babies resemble the pupils of people over 50 years. The size of the pupil increases gradually up to the sixth year, and then remains constant till the 20th. It

then diminishes rapidly, to increase slowly up till the 50th or 60th year, then they begin to diminish again; (2) the greatest contraction with the most intense illumination obtained was from 1.5 mm. to 2.0 mm., which is similar to the adult condition. With very feeble illumination, the maximum dilatation was 5.0 mm. and the variations lie between 3.0 mm. to 5.0 mm. This is very much less than in adults where the variation is between 5.0 mm. and 6.0 mm.; (3) the reactions were always prompt as in the adult. In the case of premature birth the reaction was found to be altogether normal; (4) the pupil always dilated to sensory impulses. A single drop of a 1% solution of atropine caused a prompt and lasting dilatation, which, however, never exceeded 5.5 mm. A. LEVY.

(6) **Wolf** in this paper seeks to establish his priority in these investigations. A. LEVY.

(7) **Bach's** method of investigation consisted in seating the subject at two metres distant from a white wall illuminated by two windows, ordinary daylight being used. Control experiments with incandescent gas were made which gave practically the same results. The subjects at first looked straight in front of them for 20 seconds and then fixed a white object at a half metre distance. This object could be approached gradually from the front, or from one or other side, or from above or below. Bach's principal conclusions are: (1st) The pupils began to contract when the fixation object was brought within 30 cm. or 40 cm. of the eye, it became more marked at about 15 cm. The contraction increased slowly until at a certain point a strong convergence impulse caused the pupil to contract suddenly and markedly. (2nd) The contraction of both pupils took place even when one eye was excluded from fixation. (3rd) In young people under 25 years of age the contraction began sooner at a distance of about 40 cm., while for older subjects about 30 cm. In all the contraction continued to increase until the object was within 10 cm., or even less of the eye; the amplitude varied from $\frac{1}{4}$ to $\frac{3}{4}$ of a mm. (4th) In many cases of Argyll Robertson pupil a remarkably prompt contraction and dilatation of the pupil was seen, with an amplitude extending to 2.5 mm. (5th) In anisometropia and in amblyopic eyes the behaviour of the two pupils is the same. (6th) In almost complete paralysis of the accommodation contraction of the pupil to convergence may be normal. (7th) Pupils dilated by cocaine re-act to convergence. (8th) In well-marked eserine myosis reaction to convergence may still take place. Atropine, of course, abolishes the reflex. A. LEVY.

(8) **Munch** is of opinion that a dilator of the iris has been proved to exist. He, however, says that the spindle-cell layer

of Henle is not the only muscular dilator present, but that the cell net-work comprising the stroma of the iris is of a muscular nature, and that the whole of this is to be regarded as the true dilator, it having been shown that elastic fibres do not exist in the iris.

A. LEVY.

(9) **Bach** in this paper, which is in continuation of the work described in the same journal last year, takes into consideration some of the work done upon this subject in the intervening time and describes some new experiments. The paper, however, does not lend itself to condensation.

A. LEVY.

(10) **Bach** and **Meyer** mention a few experiments on rabbits in continuation of their work of last year (*vide Graefe's Archiv*, Band LIX). The conclusion they arrive at is, that in this animal there are motor fibres of the fifth nerve, which travel to sphincter pupillæ, through the ciliary ganglion, but without having any cell station in this ganglion or in the superior cervical ganglion.

A. LEVY.

(11) **Wessely** discusses the different opinions held as to the action of adrenalin upon the pupil and tension when instilled into the conjunctival sac. He explains the different results obtained by the different strengths of the solutions which have been placed upon the market. Thus the v. Fürth "Suprarenin" powder contains 50 per cent. of adrenalin and the solution 5 per cent., while the tablets of Burroughs & Wellcome and others represent a 5 per cent. solution. To obtain mydriasis and diminished tension in the human eye, it is necessary to use such strengths of adrenalin as to be dangerous. Therefore these phenomena are never obtained; whereas in the animal (rabbit) they can easily be elicited.

A. LEVY.

II.—CYTOTOXINS AND SYMPATHETIC INFLAMMATION.

Golovine, L. L.—On the importance of cytotoxins in ocular pathology, especially in the pathogenesis of sympathetic inflammation. (*De l'importance des cytotoxines dans la pathologie oculaire et en particulier dans la pathogénèse de l'inflammation sympathique.*) *Archives d'ophtalmologie*, février, 1905.

After discussing the current theories of the production of sympathetic disease, **Golovine** (of Odessa) summarily disposes of the migratory theory by pointing out that the passage of micro-organisms from one eye to the other has been proved neither by pathological examinations nor by experimental researches. With regard to the passage of toxins, that explains

one class of case only, namely, sympathetic papillitis. In admitting that the blood stream is the means whereby the second eye is affected we are faced by two difficulties: first, the prolonged stay of microbes in the blood, as in cases where sympathetic inflammation fails to develop until years after the original injury; secondly, the harmlessness of the microbes as regards the system generally, seeing that a general infection is not met with in sympathetic inflammation. Golovine hesitates to accept, without further confirmation, the ultra-microscopic researches of Raehlmann (March, 1904), who claims to have discovered special bacteria in the vitreous body in a case of sympathetic inflammation.

The second part of the communication contains an account of Golovine's own views and researches, which may be summarised as follows: when the eye is wounded, especially in the ciliary region, there comes about (with or without the intervention of micro-organisms) a destruction of the ciliary cells, of which the resorption gives rise to the formation of cytotoxins in the organism. Under certain conditions (the nature of which Golovine fails to specify) these cytotoxins gain the other eye by means of the blood-stream, and may there exercise a specific action upon the cellular elements of the ciliary body. Any microbes that chance to be present in the blood may contribute their quota to the production of the resulting inflammation, but their rôle is purely secondary. It is possible that the cytotoxins may possess a specific action. Golovine claims to have demonstrated the formation in the animal economy of cellular poisons which have a specific action upon the ciliary body. These products he has prepared under the form of so-called heterotoxins—*i.e.*, poisons elaborated by one species of animals, and specific for those of another species. An emulsion of the ciliary body and iris of a dog was injected into the peritoneal cavity of a rabbit. Serum from the rabbit thus treated was inoculated into dogs, both locally and into the blood stream. Injection of the serum into the anterior chamber or vitreous body produced irido-cyclitis, the intensity of which depended upon the number of injections. The clinical observation was confirmed by pathological examination of the inflamed eye. Injection of cytotoxic serum into the blood of dogs produced no obvious evidences of ocular inflammation. But microscopical investigations revealed the existence of an inflammation limited exclusively to the ciliary body. It is remarkable that the pigmentary cells were sometimes completely deprived of pigment. These experiments lead Golovine to surmise that the animal organism is capable of elaborating and retaining in its serum two cytotoxins, to one of which he gives the name "cyclo-toxine" and to the other "pigmentolysin." S. S.

III.—PATHOLOGY.

(Fourth notice.)

- (1) Müller, L.—Changes in the fundus in miliary actinomycosis. *Klin. Monatsbl. f. Augenheilk.*, März, 1903, and *Ophthalmic Record*, August, 1903.
- (2) Stoewer —Some particulars relative to the pathology of the lens. (Beitrag zur Pathologie der Linse.) *Klin. Monatsbl. f. Augenheilkunde*, 1903, Bd. I, p. 141.
- (3) Bietti, A.—Clinical and anatomical contributions to the study of metastatic ophthalmia. (Contributo clinico ed anatomico allo studio dell'oftalmia metastatica.) *Annali di Ottalmologia*, Vol. 32 (1903), Fasc. I, p. 3.
- (4) Chiari, C.—An anatomico-pathological contribution to the study of glaucoma secondary to dislocation of the crystalline lens. (Contributo anatomo-patologico allo studio del glaucoma secondario a lussazione des cristallino.) *Annali di Ottalmologia*, Vol. 32 (1903), Fasc. 9-10, p. 597.
- (5) Ahlstrom, Gustaf.—On hæmorrhagic retinitis. (De la rétinite hémorrhagique.) *Annales d'oculist.*, septembre, 1903.
- (6) Zia, H.—On the extensive bone and marrow formation in the eye, together with peculiar fibrin-like formation in the calcareous lens. (Ueber ausgedehnte Knochen- und Markbildung im Auge, sowie über auffällige fibrinähnliche Gebilde in der verkalkten Linse.) *Zeitschrift für Augenheilkunde*, Juli, 1904.
- (7) Galezowski.—Glaucoma : its causes and symptoms, pathology, and treatment. (Il glaucoma : etiologia e sintomatologia. Patogenesi e cura.) *La Clinica Oculistica*. July and October, 1904.
- (8) Hamburger, C. — The anatomical and physiological bases of Prof. Stilling's theory on the origin and significance of myopia. (Die anatomischen und physiologischen Grundlagen der Prof. Stillingschen Theorie über Entstehung und Bedeutung des Kurzsichtigkeit.) *Zeitschrift für Augenheilkunde*, August, 1904.
- (9) Villard and Delord—A contribution to the histological study of the cicatrisation of corneal wounds consecutive to paracentesis of the anterior chamber. (Contribution à l'étude histologique de la cicatrisation des plaies cornéennes consécutives aux paracentèses de la chambre antérieure.) *Archives d'ophtalmologie*, août, 1904.

- (10) Tello.—A case of primary epithelioma of both corneæ. (Un caso de epithelioma primitivo de las corneas.) *Archives de Oftal.*, October, 1904.
- (11) Gourfein-Welt (Geneva).—The pathology of detachment of the retina in albuminuric retinitis. (Patogenia del desprendimiento retiniano en la retinitis albuminurica.) *Archivos de Oftalmologia Hispano-Americanos*, Diciembre 1904.
- (12) De Schweinitz, G. E., and Shumway, E. A.—Conjunctivitis nodosa, with histological examination. *Trans. American Ophthalmological Society*, Vol. X, Part, II, (1904), p. 237.
- (13) Fortunati.—Histological examination of the eyes in a case of quinine amblyopia. (Ricerchi istologiche sopra un caso di cecita da chinina nell'uomo.) *Rivista Italiana di Ottalmologia*, Gennaio, 1905.
- (14) Wiener, Alfred.—Upon a new formation of elastic tissue in the anterior chamber of the eye. (Ueber Neubildung von Glashaut in der vorderen Kammer.) *Archiv für Augenheilkunde*, 1905, p. 51.
- (15) Cirincione.—The anatomical examination of a case of retinitis proliferans. (Ricerche anatomiche sulla retinite proliferante.) *La Clinica Oculistica*, January and February, 1905.

(1) Müller had the opportunity of examining the fundi of a patient who was supposed to have miliary tuberculosis. Near the optic nerve there were a number of small, yellowish-white spots, about one-fourth the size of the papilla, over which the retinal vessels made a distinct bend: the nodules were surrounded by pigment. The eyegrounds were otherwise normal. At the autopsy the condition proved to be a miliary actinomycosis, instead of tuberculosis. Anatomical examination of the eyes showed that the nodules were situated in the retina, instead of the choroid, and were composed of collections of very large mononuclear epithelioid cells, the nuclei of which stained poorly. No micro-organisms could be found. These nodules of large, poorly-staining cells are characteristic of actinomycosis, and represent the reaction of the tissues to the irritation of the fungus with destruction of the invading organism.

(2) In two cases of congenital dislocation of the lens **Stoewer** succeeded in obtaining a considerable improvement in sight by iridectomy (4/20 to 0/10 and 5/60 to 4/35 respectively).

The reviewer may mention that Sattler has recently strongly recommended iridodesis in subluxatio lentis. Stoewer further discusses a case of lenticonus posterior, and an instance of temporary recession of the lens and iris.

A. BIRCH-HIRSCHFELD.

(3) **Beitti's** three cases are interesting, since the first shows the choroidal origin of a bilateral metastasis due to pneumococci, the second proves the possibility of the restoration of perfect sight after amaurosis and the cure of an inflammatory metastatic retinal detachment, while the third is an example of a relatively benign form of ocular metastasis from puerperal infection.

A. ANTONELLI.

(4) After the narration of three cases, **Chairi** discusses the different views held with regard to the pathogeny of glaucoma after dislocation of the lens. It appears that so long as the luxated lens has not undergone histological changes, the glaucomatous phenomena are not fatal. Occlusion of Fontana's spaces is a condition favourable to late attacks of glaucoma, and one that may be produced long after the dislocation has taken place. When Fontana's spaces remain permeable, chemical changes may occur all the same in the aqueous humour, provoking an anterior uveitis and a disturbance of filtration, which may lead to a rise in tension.

A. ANTONELLI.

(5) A woman, aged 57 years, suffered from profuse retinal hæmorrhages, followed by glaucoma, on account of which the eye was enucleated. **Ahlstrom** gives an account of the anatomical examination. He found a thickening and hyaline degeneration of the arterial walls, affecting not only the optic nerve but also the retina, and especially the capillaries. The diagnosis of thrombosis of the central vein that had been made was therefore not exact—the disease was an endarteritis proliferans. One might, it is true, believe in the existence of a thrombus in another part of the vessel, a lesion that might cause the change mentioned above. The author, however, considers this hypothesis to be improbable, since nothing of the kind could be found in serial sections.

(6) **Zia** describes the following case in a patient, aged 64 years, who had been blind in the right eye for about twenty years. The eye had caused her intense pain, and was subject to frequent attacks of inflammation. There was found to be a severe iridocyclitis, so that the eye was enucleated. The eye was fixed and decalcified, and examined microscopically. The condition

was that of a long-standing inflammation of the whole of the uveal tract and of the retina. The lens was subluxated downwards, and had undergone some absorption and calcareous degeneration. At its equator were found fibrin threads and red blood cells. The chronic plastic inflammation of the uvea formed a considerable exudation, which covered the inner surface of the choroid. This exudation had become organised, and showed various stages of development into true bone. The choroid and the retina were completely degenerated. The posterior half of the eye-ball was occupied by an extensive new formation of bone, containing numerous and well-formed marrow spaces.

A. LEVY.

(7) In these two clinical lectures, **Galezowski** gives an account of our knowledge of this disease, with a short historical retrospect, showing how slowly the facts have given up their meaning. Even now there remains much to be explained: it is easy to pick holes in every theory of glaucoma. Too much attention has hitherto been paid to the alteration in the tension and not enough to the changes in the tissues, of the disc particularly, which allow of the cupping. The nutrition of the papilla is concerned with posterior lymphatics. If these are much interfered with, the lamina cribrosa becomes weak and yields. Glaucoma, then, is the result of a lymphangitis of the posterior part of the globe.

HAROLD GRIMSDALE.

(8) Stilling's theory is that myopia is caused principally by the action of the superior oblique muscle, for it is the only one which can exert pressure on the eye-ball by means of its tendon. This can occur only in cases where the orbit has a short vertical diameter, for then the tendon lies along the eye-ball for some distance and during contraction of the muscle exerts a pressure upon it. Stilling is able to show that there was, in many cases, a definite hollow produced by the pressure of the tendon. Myopia, according to this theory, is largely a question of race. Those with broad low orbits become myopic as a result of near work, while those possessing the opposite condition did not. **Hamburger**, who has gone over Stilling's work, and has devised new experiments of his own, comes to the conclusion that Stilling's theory cannot only not be maintained, but can be shown to be definitely wrong. According to him, the incidence of myopia bears no relationship to the orbital index, while many of the conditions described by Stilling are either *ante-facts* or *post-mortem* changes.

A. LEVY.

(9) **Villard** and **Delord** describe the process of repair incident to the healing of a corneal wound made in the

operation of paracentesis. Upon this matter writers are silent. On the one hand, the process is of no great practical importance to the clinical observer; and, on the other, material can rarely be obtained.

The specimen examined by the authors was taken from a man, aged 52 years, whose right eye manifested violent irido-cyclitis with hypopyon. There was a history of acquired syphilis, and the patient was actually suffering from posterior spinal sclerosis. The pus was evacuated by paracentesis of the cornea, but the symptoms speedily became worse, so that four days after the first operation, abscission was performed. The specimen thereby obtained was placed in 10 per cent. formol for a week, washed in 70 per cent. alcohol, embedded in paraffin, and cut for the microscope. Serial sections were stained with hæmatein and eosin and with Unna's polychrome methylene blue. The corneal puncture was found to take the form of an obliquely-placed tunnel, filled in its outer half by a conical plug of more or less modified epithelial cells from the anterior surface of the cornea, in which karyokinetic figures were observed here and there. The inner half of the channel was filled with leucocytes, red blood cells, and a fibrinous reticulum, derived partly from the hypopyon but mostly from the blood-vessels. The corneal lamellæ bordering the wound showed few modifications. Bowman's membrane, intact above, had disappeared between the lower lip of the wound and the neighbouring limbus. Descemet's membrane showed simply a clean puncture. The hypopyon was composed of granular material, including vacuoles, and such formed elements as mononuclear and polynuclear leucocytes and red blood cells. The leucocytes and red cells stained better with reagents and were more numerous in the neighbourhood of the iris. The iris, and especially the ciliary body, to put the matter briefly, manifested the usual signs of an acute and intense inflammation, namely, engorgement of vessels, leucocytic infiltration, alterations in the pigment cells, swelling of certain connective tissue cells, the presence of meta-chromatic "mastzellen" so-called, and desquamation and hyperplasia of the endothelial cells of the anterior surface of the iris. The angle of the anterior chamber showed an effusion from the ciliary body of white and red blood cells, some of the former containing hæmoglobin and others particles of pigment.

S. S.

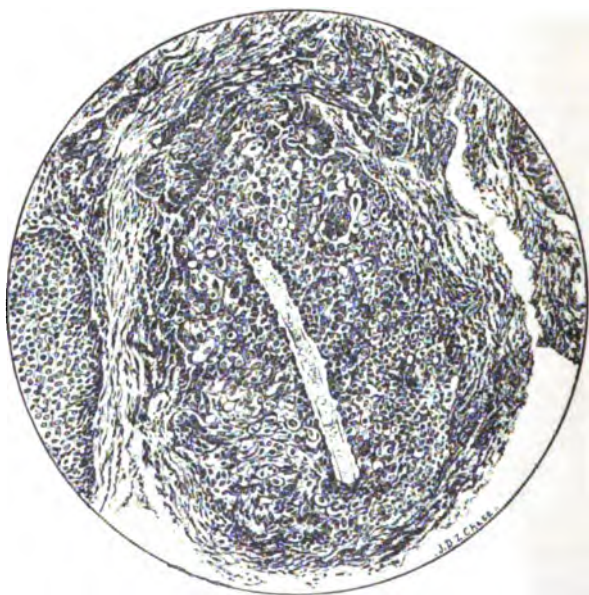
(10) **Tello's** patient had several operations (cauterisation and scraping) on the cornea, and this was followed by the appearance of rough irregular furrows and ulcers covering the whole surface. He had also a rodent ulcer on the side of the nose. Diagnosis lay between epithelioma and lupus. The

cornea was eventually abscised, and microscopical examination proved the growth to be truly cancerous.

HAROLD GRIMSDALE.

(11) **Gourfein-Welt** reports the examination of two cases microscopically, and concludes that the first stage is a grumous exudation on either side of the retina, and derived from it ; the hexagonal pigment epithelium remains attached to the exudation from the layer of rods and cones, a fact which proves that this exudation precedes the true subretinal accumulation ; this latter is homogeneous, and is nothing but a local collection of fluid, analogous to the œdema of other parts of the body. Its source of origin is the choroid. The detachment can be produced without active traction, since the author has demonstrated adhesions between the retina and the vitreous humour ; but, on the other hand, the retraction of the vitreous is probably secondary to the detachment of the retina, and therefore passive traction cannot be the cause of the displacement. HAROLD GRIMSDALE.

(12) A negro girl, aged 15 years, showed a congested area in the ocular conjunctiva of one eye, associated with a number of yellowish-grey nodular swellings. The trouble had been present for a few days before she was seen by **de Schweinitz** and



Microscopic appearance of section of a conjunctival nodule. In its centre is a caterpillar hair, surrounded by round cells and giant cells ; externally, spindle cells and capsule.

Shumway and was said to have followed "something getting into the eye." The local condition suggested tuberculosis. The diseased parts were excised, hardened in formaline, embedded in paraffin, cut, and stained for the microscope. The conjunctival epithelium contained leucocytes and was markedly thickened. The subepithelial tissues were composed of coarse bundles of connective tissue, together with many round cells and numerous distended blood-vessels. The nodules measured about 0.25 mm. by 0.4 mm. to 0.6 mm. As shown by the figure, the outer portion of each nodule was made up of round and spindle cells, arranged concentrically and enclosed by a capsule. The interior of the nodule consisted of epithelioid cells, giant cells, and the section of a caterpillar hair. No micro-organisms could be found. Inoculation of the anterior chamber of a rabbit's eye with a strip of the diseased conjunctiva led to no definite results. Inasmuch as there was no sign of miliary nodules, the tuberculous character of the disease may be excluded. It is surmised that in this case the particular caterpillar concerned was the *Spilosoma virginica*, the familiar "woolly bear."

(13) In no case hitherto have the eyes of a patient suffering from quinine blindness been subjected to microscopical examination. **Fortunati's** case, therefore, has more than usual interest. The subject, a man aged 59 years, was admitted on account of severe malaria; in hospital he received three grammes (about 50 grains) of hydrochlorate of quinine, in two doses, subcutaneously. Eight hours after the second injection the man, awaking from sleep, found himself blind. The fundi presented the typical appearance of quinine intoxication, and the diagnosis was clear beyond doubt. Eight days after, the patient, who had been in a very grave state throughout his stay in hospital, died during a febrile attack of unusual severity.

The eyes were removed, along with as much of the optic nerve as possible, twelve hours after death. The nerve seemed absolutely normal. The retina, it is true, showed certain signs of degeneration, but taking into account the age and the previous exhausting malady, it seemed doubtful whether the changes were to be attributed to the quinine: Fortunati compared the sections with others, taken from a man who had died from hypertrophic cirrhosis of the liver, who therefore could by no chance have suffered from quinine poisoning, and found the appearances identical. The layer of rods and cones had been much altered by cadaveric changes.

These findings agree in all points with the results obtained by examination of animals. As to the mechanism of the intoxica-

the blindness to a paralysis of the pigment cells and of the rods and cones, due directly to the action of quinine.

HAROLD GRIMSDALE.

(14) **Wiener's** communication goes to show that in cases of destructive inflammation Descemet's membrane may be replaced by a morphologically identical structure. The eye was removed on account of absolute glaucoma following chronic irido-cyclitis. Sections were stained in various ways. Amyloid substance was present in the neighbourhood of Bowman's membrane, which itself had disappeared. Descemet's membrane was thickened by and incorporated with elastic tissue, which further covered the iris and the pupil. The anterior chamber was lined by endothelium. Fatty tissue and bone lay between the lamina vitrea of the choroid and the retina. The author believes that the source of the elastic tissue present in the specimen must be traced to the endothelial cells.

S. S.

(15) **Cirincione** had the man whose eye is the subject of this report under his care for about two years before his death. He was a sailor who had noticed a gradual failure of his vision in the right eye for ten years before he came under the care of the author. This failure had begun as a fine veil covering the objects looked at; gradually this was replaced by dark patches which completely shut out the view of parts of the field, so that at one time he was able to see the lower part of the face and the upper part of the chest of any person to whom he was talking, if he used the right eye only. These dark areas spread until the whole was dark. Treatment was of no avail. He came to Cirincione on account of a foreign body in the sound eye, and presented himself for observation on several future occasions. There was no history of hereditary or acquired syphilis, and the only disease from which he had suffered was malaria.

Ophthalmoscopic examination of the right eye showed that the posterior part was occupied for a space of about 8 O.D. by an area of atrophic chorio-retinitis, from the centre of which sprang a mass of new-formed tissue, bluish-white in colour, compact in the centre, and spreading out at the periphery into bands and fibrils. No trace could be seen of the papilla, but its position could be inferred from the situation of the vessels running to the periphery of the retina. The mass was made up of two main parts, the middle, a semilunar band placed transversely across the site of the papilla, and the peripheral, made up of four lesser bands which arose from this primary mass, and diverged from its convex border. "The space contained in the semi-circle at the level of the papilla, is filled by a semi-transparent membrane. Of the four lesser bands the nasal is the shortest, the temporal almost as short, divides into two, and the distal of these spreads

out like a goose's foot. All the bands break up at their extremities into fan-like expansions and are connected to the edge of the atrophic area, on which the whole mass lies. These bands project forward into the vitreous, so that marked parallactic movement can be seen. The nasal end of the primary semilune is much elevated but is not mobile. The new-formed tissue is not supplied by the central vessels, but there can be seen very fine vessels, obviously new-formed and separate from the central vessels."

The eyes were removed 26 hours after death, and at once immersed in Müller's fluid. The first part of the account of the anatomical examination deals with certain abnormalities found in the peripheral retina, in the atrophic central patch, and in the optic nerve. In the equatorial region of the retina, there was found a disappearance of the nervous elements and an hypertrophy of the connective and sustentacular tissue. The layer of rods and cones is converted into a homogeneous mass joined to the pigmentary epithelium and detached from the retina. In the atrophic region, the retinal layers can never be made out and the choroid is very thin; the retina is represented by a thin band of fibrous tissue, in which the marginal fibres are thick and run parallel with the surface and the intermediate layers are thin and interwoven in all directions. The external surface of this part is adherent in numerous places to the choroid; this latter is thinned in all layers with the exception of the lamina vitrea, which is everywhere thick. The substantia propria of the choroid is represented by a few strands of connective tissue and some scattered masses of pigment. In it can be seen sections of big veins and arteries. The lumen of the latter is very small and empty, not infrequently divided by fibrocellular tissue. The optic nerve presents a well-marked transverse striation, instead of the usual longitudinal marking; this striation is due to increase of the connective tissue of the nerve. The optic papilla is cupped, the bottom of the cup corresponding to the lamina cribrosa. From the centre of the cup, springs a mass of tissue which bends over the edge of the disc and spreads over the surrounding retina; this is directly continuous with the fibrous capsule of the central vessels. These shew much change, their walls are thick and their lumen consequently small and sometimes altogether wanting; all parts of the wall alike share in the thickening. The mass of new formation springing from the optic nerve is continuous with the mass seen by the ophthalmoscope below the optic disc. Examining this region in the sections, it is seen that the retina is profoundly altered. It is much thickened, even to thrice its normal thickness; the new formed stratum lies in the internal surface; near the disc

tion, Fortunati inclines to the opinion of De Bono, who ascribes the two parts form one whole; more peripherally, the connective, new-formed tissue is superficial to the retina. It can be seen that this consists of layers of fibres running parallel with the internal retinal surface. Few nuclei can be found in this tissue, and these are long and thin like those of endothelium. Under the superficial stratum of fibres is a zone of tissue in which cellular elements of all forms are found, together with a network of fibres of three kinds; thin fibres forming a delicate reticulum, vertical fibres (of Müller), and, lastly, fibres of larger size, grouped into bundles running in all directions. All the vessels in this mass are sclerosed, and many show no lumen at all. Along with the primitive retinal vessels many others run, which may be recognised to be of new formation, from the number of sections, the inequality of calibre, and the surrounding halo of small-celled tissue. Examination of sections along the length of the divergent striæ, reveals the fact that the new-formed tissue overlies the retina and corresponds accurately to the regions where the white bands were seen by the ophthalmoscope; the peripheral bands are directly continuous with the mass of fibrous tissues seen at the head of the optic nerve.

Two important questions are discussed: (1) the origin of the fibrous tissue; (2) the relation of hæmorrhage to the disease. As to the latter point, Cirincione has injected blood into the vitreous of animals on repeated occasions, and has never observed anything at all comparable to a proliferating retinitis. Further, he points out that vitreous hæmorrhages are very common, and the disease at present under consideration is very rare. Lastly, that the new-formed vessels are almost certain to give way and to produce hæmorrhage, which is therefore secondary to the disease. The tissue of new formation seems to spring from the connective tissue surrounding the vessels of the optic nerve, and to spread thence over the retina, but at the same time there is a true increase of the sustentacular fibres of the retina, which is much thickened thereby. The cause of the disease is to be sought in the presence of some irritating substances in the vitreous, which act on the adventitia of the central vessels.

HAROLD GRIMSDALE.

IV.—INFECTIONS.

- (1) Lange.—A contribution to the prognosis and therapeutics of perforating infected injuries of the eye. (*Zur Prognose und Therapie der perforierenden infizierten Augenverletzungen.*) *Klin. Monatsbl. f. Augenheilkunde*, 1903.

- (2) **Bull, Charles Stedman.**—Operations upon the eyeball in the presence of an infected conjunctival sac. *Trans. American Ophthalmological Society*, Vol. X, Part II, 1904.
- (3) **Bourgeois, A.**—The treatment of infectious complications after operation for cataract. (Le traitement des accidents infectieux après l'opération de la cataracte.) *Recueil d'ophtalmologie*, novembre, 1904.
- (4) **Vollaro, Lieto.**—Researches as to the micro-organisms contained in the conjunctival sac during the post operative treatment without bandages. (Ricerche sul conteamto microbico della Conginutiva nel trattamento post operativo senza fasciatura occlusiva.) *Archivio d'Ottalmologia*, Vol. XII, Fasc. Gennaio e Febbrajo, 1905.
- (5) **Cohn.**—On the unsuccessful action of iodoform in intra-ocular disinfection. (Sugli insuccessi della disinfezione endoculare mediante l'iodoformio.) *La Clinica Oculistica*, Marzo, 1905.

(1) A boy of seven years was wounded in the eye with an arrow. On the following day purulent uveitis was present. The prolapsed iris was removed, and the wound was cauterised with the loop of the galvano-cautery. The eye was bandaged, and inunctions of mercury (2 grammes a day) were practised. The remarkable improvement that resulted is ascribed by **Lange** mainly to the mercury. In all cases of this kind he advises the inunction treatment recommended by Schirmer.

A. BIRCH-HIRSCHFELD.

(2) The most important, frequent, and dangerous sources of infection as regards operations upon the eye are to be found, in **Bull's** opinion, in the eyelids, conjunctival sac, and lacrymal apparatus. These parts cannot with certainty be rendered sterile, as shown by the investigations of Gayet, Rymowicz, and others. A bacterioscopic examination of the contents of the conjunctival sac should be made before any operation upon the eye. Infection by streptococci is very grave, and usually entails perforation of the cornea and suppuration of the eyeball. How can the dangers of infection be avoided? Any morbid condition of the parts named should be cured before an operation is undertaken. If an inflammation of the lacrymal sac resists treatment the puncta should be obliterated by the actual cautery or the lacrymal sac be excised. The external surface of the lids and the neighbouring parts should be cleansed with soap and warm water, and the conjunctival sac should be repeatedly irrigated with an indifferent sterilized fluid, as normal saline or boric acid solution. Surplus fluid should be mopped up from the conjunctival sac with sterilized moist cotton. The edges of the

eyelids should be gently rubbed with sterile pads and at the same time be freely irrigated. Bull does not favour the abandonment of the ordinary protective bandage, except possibly in patients possessing a quiet, placid, and equable temperament. Finally, on the first sign of infection of an operation wound, the lids should be cleansed in the way described above, and the sac thoroughly irrigated. The wound must then be re-opened and cauterised throughout its entire length with the galvano-cautery. Lastly, the anterior chamber is to be irrigated with sublimate solution (1:5,000), and the eye closed by means of a moist sterilized pad.

(3) Notwithstanding the most careful aseptic and antiseptic precautions, accidents due to infection are liable to follow operations for cataract. **Bourgeois** recognises two forms:—(1) those which start in the cornea and appear within 24 hours after the operation—these are the most serious kind; (2) those which begin in the uveal tract, and appear from the fifth to the eighth day, and are less serious. In order to deal effectually with the first class of infection, it is necessary to attack the trouble as early as possible. For this reason the author dresses his cataracts on the next morning after operation, or earlier if there is the least suspicion of trouble in the eye. His treatment consists in subconjunctival injections—near the outer canthus—of perchloride or cyanide of mercury (1:1000), to which a few drops of 5 % solution of cocaine have been added. If the infection is severe, two injections a day are given. From four to eight injections are sufficient to stem the course of the infection. General remedies, including atropine, galvanocautery, &c., are employed as well.

J. JAMESON EVANS.

(4) The researches made by **Lieto Vollaro**, in the Laboratory of Friburg, of which Professor Axenfeld is the Director, demonstrate the advantages which the post-operative "uncovered" treatment has over that with bandaging, at present in general use, after all operations on the eye. Before giving the result of his minute and difficult researches the author defines what is to be understood by "uncovered" treatment. Thus, he says, there is the so-called method of Hyört, which consists in leaving the operated eye totally unprotected, and the other of Czermak-Fuchs, or the so-called "German method," according to which, although the usual bandage is done away with, the operated eye is nevertheless protected by means of a linen-bound wire net, monocular or binocular as the case may be, which rests on the bony edge of the orbit, and is kept *in situ* by means of two pieces of tape tied round the head of the patient. Others, following the example of Professor Axenfeld, use well-sterilized gauze for the first twenty-four hours after cataract operation, applied to the eye underneath the net or mask.

Vollaro experimented on 35 cases and, after comparing the result of his researches with that obtained by others under similar circumstances, came to the following conclusions:—

1. That even when Czermak-Fuchs' method in the post-operative treatment is adopted there is always an increase of the micro-organisms contained in the conjunctival sac after the lapse of a certain number of hours from the operation.
2. That this increase is, however, less marked with Czermak-Fuchs' method than with usual bandaging.
3. That the micro-organisms found in the conjunctival sac, from a certain number of hours till twenty-four hours after the operation, belong to the same species as those obtained immediately before the operation.

Having given the above conclusions, the author proceeds to enumerate the well known fundamental rules to be adhered to in the subsequent treatment of the wound made, whatever be the method of protection chosen, *viz.* :—

1. Operations on the eye should not be undertaken in patients who present catarrhal affections of the conjunctiva and lacrymal apparatus or general debilitating diseases.

2. Thorough preparation of the patients must be strictly observed, especially with regard to the eyelashes and eyebrows, which should preferably be removed, and to the teeth, mouth, and nose, which should be thoroughly cleansed before operating.

3. The instruments, lotions, and dressing materials must be well sterilized, and the field of operation and the operator's hands carefully disinfected.

4. Irritating liquids such as antiseptic solutions (hyd. perch. 1 in 5,000) and the like must not be allowed to come in contact with the conjunctiva.

5. Absolute rest in the recumbent dorsal position in a semi-dark room must be enforced to ensure rapid healing of the wound, which often takes place about twelve hours after the operation—that is, when the increase in the number of the micro-organisms in the conjunctival sac is still small.

CHARLES MANCHÉ.

(5) Iodoform, as well known, held and still holds among eye specialists a reputation far superior to its real efficacy. It has been employed not only in suppurative conjunctivitis and keratitis, traumatic or other, but also as a prophylactic against panophthalmitis and sympathetic ophthalmia in cases of penetrating wounds of the eye. **Cohn**, however, after revising the statistics of several other specialists and considering the results obtained in cases that were under his own treatment, comes to the conclusion that it is altogether erroneous to consider iodoform, introduced into the anterior chamber or into the vitreous, as a conservative means against panophthalmitis.

In his experience, on the contrary, he finds that panophthalmitis and, what is more, sympathetic ophthalmia, are to be observed with greater frequency after its use. Iodoform, therefore, or its substitute xeroform, is only to be employed in cases of suppuration limited to the external surface of the eye.

CHARLES MANCHÉ.

V.—INTRA-OCULAR CYSTICERCUS.

- (1) Würdemann, H. V.—Clinical observations on a probable case of intra-ocular *Cysticerci* occurring in both eyes. *Annals of Ophthalmology*, October, 1903.
- (2) Carbone, Agostino.—On the importance of early operative interference in cases of endobulbar cysticercus and the value of the intraocular tension in prognosis. (Dell' importanza dell' intervento precoce nei cisticerchi endobulbari ed importanza prognostica della tensione oculare.) *La Clinica Oculistica*, Maggio-Giugno, 1904.

(1) Würdemann's case was that of a native of Tennessee, aged twenty-four years, who after ranching in the State of Texas, suffered from a rapid failure of vision to light perception of the right eye. About a year later he consulted Dr. Sidney Walker, who found an almost total detachment of the retina of the same eye, and in the left, a "cysticercus about two-and-a-half millimeters long in the vitreous." The patient was seen by the author on the 1st of July, 1903, when he complained of subjective sensations in the left eye which were similar to those which he had experienced in the right one some eighteen months before. Examination showed that the vision of the right eye was reduced to light perception down and out. The vitreous was clear. There was detachment of the retina with retinitis proliferans. Vision with the left eye equalled $\frac{5}{6}$. Periphery of field was normal. There was a small scotoma situated ten degrees down and out from fixation point. There was a hæmorrhage from the "second temporal artery" of the retina "above" with a bottle-shaped cyst attached to it by its base. The head of the cyst was free in the vitreous, and it apparently had six hooklets. The author saw distinct movements of the head with a general quivering, elicited especially by rapid movements of the eye, and the light of an electric ophthalmoscope. He says that the "parasite bored through the artery, and did not enter the eye through the choroidal vessels." He attributes the changes in the right eye to the

entrance of a cysticercus, and points out that "no case is known to have developed cysticerci in both eyes except the one whose history is herewith submitted."

F. W. MARLOW.

(2) **Carbone** reports two cases of intra-ocular cysticercus, as follows: *Case No. 1.*—A woman, aged 26 years, had observed worms in her stools for about a year, and during that time had become anæmic. There had been recurrent inflammations of the conjunctiva, associated with pain and failing sight. On examination, a vesicle was found in the vitreous, and the field of vision was restricted below. After the administration of a dose of male fern, the woman passed many proglottides, but not the head of the worm. An incision into the eyeball led to the immediate extrusion of a pear-shaped vesicle, the size of a millet-seed. Three months later the fundus had cleared up, and the visual field had increased below by ten degrees. *Case No. 2.*—A girl, 12 years of age, presented chronic iritis, total posterior synechiæ, and softening of one eye, and vitreous opacities, detachment of the retina by three small bodies, and softening of the other eyeball. Through an incision in the lower-outer part of the left globe, three cysticercus vesicles were extracted with the curette. Carbone regards early operation as the only means of treating intra-ocular cysticercus. Even if sight is forfeited, deformity may thereby be prevented, since the disease, if left to itself, must end by necessitating enucleation or evisceration, owing to the irido-cyclitis set up by the parasite.

ANNIE T. BARNARD.

VI.—OPERATIONS.

(Third Notice.)

- (1) **Hermann, J.**—On methods of treating *ulcus corneæ serpens*, with special reference to those employed in the University Clinique at Bonn. (Ueber die Behandlungsmethoden des *Ulcus Corneæ serpens* mit besonderer Berücksichtigung in der Bonner Univ.-Augenlinik geübten Therapie.) *Klin. Monatsbl. f. Augenheilk.*, 1903, II, p. 429.
- (2) **Boureau (Tours).**—Trephining over the visual centre for ophthalmoplegia consecutive to fracture of the cranial vault. (Trépanation au niveau du centre visuel pour une ophthalmoplégie consécutive à une fracture de la voûte crânienne.) *La Clinique Ophtalmologique*, janvier, 1904.

- (3) **Rogman.**—A new operative procedure for the cure of epicanthus. (Nouveau procédé opératoire pour corriger l'épicanthus.) *Annales d'oculistique*, T. CXXXI, p. 464, juin, 1904.
- (4) **Jocqs.**—Strabismus of 50 degrees.—Absence of convergence.—Cure by musculo-capsular advancement. (Strabisme de 50 degrés.—Absence de convergence.—Guérison par l'avancement musculo-capsulaire.) *La Clinique Ophtalmologique*, 25 juin, 1904, and *Bull. et Mém. de la Soc. française d'Ophtal.*, 1904, p. 396.
- (5) **De Britto, Victor.**—A contribution to the study of optico-ciliary neurectomy. (Contribution à l'étude de la neurectomie optico-ciliaire.) *La Clinique Ophtalmologique*, 25 août, 1904.
- (6) **Vitali, Emilio.**—The treatment of hypopyon. (Trattamento dell'ipopion.) *Recueil des travaux X^e Congrès international d'ophtalmologie*, Lucerne, septembre, 1904.
- (7) **Loring, Robert G.**—The present status of cervical sympathectomy for glaucoma simplex. *Archives of Ophthalmology*, September, 1904.
- (8) **Valois.**—Some indications for enucleation. (Quelques indications de l'enucleation.) *L'Ophtalmologie Provinciale*, octobre, 1904.
- (9) **Whitehead, A. L.**—Cavernous angioma of orbit. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 209.
- (10) **Terson, A.**—The operative treatment of senile ectropion (Le traitement opératoire de l'ectropion senile.) *Ann. d'oculistique*, T. CXXXII, p. 321, novembre, 1904, and *Gazette des Hôpitaux*, 10 novembre, 1904.
- (11) **Sattler, H.**—On the re-introduction of Iridodesis. (Zur Wiedereinführung der Iridodesis.) *Klin. Monatsbl. f. Augen.*, November, 1904.
- (12) **Hull, Captain Alfred J.**—The treatment of purulent ophthalmia in adults by canthoplasty. *Journ. of the Royal Army Medical Corps*, December, 1904.
- (13) **Lagleyze.**—An operation for the relief of entropion and trichiasis. (Operación del entropion y triquiiasis.) *Archivos de Oftalmologia Hispáno-Americáno*, Enero, 1905; and *Archives d'Ophtalmologie*, décembre, 1904.
- (14) **Fage.**—The optical value of iridectomy in opacities of the cornea. (Valeur optique de l'iridectomie dans les taies de la cornée.) *Bull. et Mém. de la Soc. franç. d'ophtal.*, 1904, p. 269.

- (15) **Houdart, E.**—Obstinate symblepharon cured by the combination of sutures and cauterisation. (*Symblépharon rebelle guéri par la combinaison des sutures et de la cautérisation ignée.*) *Bull. et Mém. de la Soc. française d'Ophthal.*, 1904, p. 400.
- (16) **Ramsay, A. Maitland.**—On emergencies in ophthalmic practice. *Lancet*, 14th January, 1905.
- (17) **Cutler, Colman W.**—Excision of the superior cervical ganglion of the sympathetic for simple glaucoma. *Medical News*, 28th January, 1905.
- (18) **Gallemaerts.**—The electrolytic treatment of spring catarrh. (*Traitement électrolytique du catarrhe printanier de la conjonctive.*) *Polyclinique de Bruxelles*, 1 février, 1904, and *Rev. générale d'ophtalmologie*, 31 janvier, 1905.

(1) **Hermann** first reviews the various milder methods of treating ulcus serpens. He considers keratotomy to be on a par with cauterisation as regards efficacy. In many cases, he knew keratotomy to have resulted in a cure where cauterisation had been ineffectual. He refutes Zirm's contention that keratotomy frequently leads to synechia anterior, secondary glaucoma, etc. Increase of pressure occurred in only 3 out of 88 cases, although adhesions of the iris resulted more frequently. Hermann also considers the painfulness of the operation to be less than Zirm asserts.

A. BIRCH-HIRSCHFELD.

(2) **Boureau** successfully trephined over the posterior part of the visual centre for the relief of eye symptoms caused by fracture of the skull in the parieto-occipital region. The eye symptoms were almost exclusively those of a paralysis of the exterior branches of one third nerve.

ERNEST THOMSON.

(3) **Rogman** considers that epicanthus is largely caused by the traction of a band formed by the summit of the fold which constitutes the deformity. His operation aims at removing the horizontally excessive skin and utilising the flaps dissected up in doing so to relieve this constriction. It is performed as follows:—(1) an incision the shape of an inverted V is made between the semilunar border of the epicanthus and the median line with the lower end of its limbs on a level with the internal canthus; (2) the outer limb of the incision is prolonged downwards so as to form the inner limb of an upright V, the apex of which is situated on the semilunar ridge, while its external limb runs upwards on the ocular surface of the fold as high as the internal canthus; (3) the flaps marked out by the incisions are "sufficiently freed,

crossed, and fixed by sutures." The size of the flaps should depend on the amount of deformity to be corrected, and if advisable their position may be reversed (*i.e.*, the upper V made upright and the lower inverted). R. J. C.

(4) **Jocqs** again advocates his method of musculo-capsular advancement as described in *La Clinique Ophthalmologique*, 1903, p. 145. He relates a case in which, while lateral movements of the eyes were good, there was no converging power at all. Both eyes were operated upon, but in the right (the habitually deviating eye) the conjunctiva was adherent to the capsule, and 5 mm. of the conjunctivo-capsulo-muscular flap were excised. Both externi were carefully tenotomised. The result was not only cosmetically good, but the convergence function was restored. This, Jocqs points out, must mean that the case was not one of failure of convergence innervation, but of pure muscular failure. Convergence requires a much greater muscular effort than associated lateral movements. ERNEST THOMSON.

(5) **De Britto** is an enthusiastic supporter of optico-ciliary neurectomy in selected cases, eight of which he records. Cases suitable for this operation in preference to enucleation are chronic relapsing iridocyclitis with loss of vision, and absolute inflammatory glaucoma, especially where ordinary methods are contraindicated, or have failed. Several millimetres of the optic nerve are to be excised, and a careful "toilet" made of the posterior pole of the eye, so as to excise freely the posterior ciliary nerves. The only real difficulty about the operation is the bleeding, which is much lessened by the use of adrenalin and the employing Warlomont's forceps-scissors for cutting the optic nerve and the vessels. In one only of the eight cases was there any subsequent complication, namely, neuro-paralytic keratitis. ERNEST THOMSON.

(6) **Vitali** recommends subconjunctival injection of sodium chloride in hypopyon-keratitis, especially in those cases so common among reapers in harvest time. He has sometimes seen the pus disappear in from 24 to 48 hours after a single injection. In other cases two or three injections were necessary. On the other hand, there were cases which failed to respond to the treatment, especially those where hypopyon was associated with dacryocystitis. In such cases Vitali resorts to evacuation of the pus by corneal incision (Saemisch's section). Vitali, so far, has not found injections of sodium chloride efficacious in ordinary corneal ulcers.

ANNIE T. BARNARD.

(7) In this paper the sixty reported cases of simple glaucoma that have been treated by sympathectomy are classified and tabulated. The various theories are discussed, with the result that "one finds oneself in the realm of hypothesis with various conflicting theories." Clinical reports fail to show that early operation is markedly better than a late one. In almost all cases intraocular tension is reduced generally to normal, and may remain so for many months: vision also shows more or less improvement of considerable duration. After-results, sufficient to contra-indicate the operation, have so far not been demonstrated. **Loring** thinks that the operation should be more often tried as a final resort when myotics, iridectomy, and sclerotomy have failed.

FRANK W. MARLOW.

(8) **Valois** makes it a rule in the case of workmen to enucleate all blind injured eyes, if there is a serious alteration in their structure, especially if the iris is adherent to the wound.

R. J. COULTER.

(9) **Whitehead** removed from the orbit of a man, aged 51 years, a cavernous angioma measuring 5.4 cm. by 3.7 cm. Its growth had extended over a period of ten years. Vision after operation = 6/9.

(10) In 1896 **Terson*** published an account of a method of operating for the cure of senile ectropion. As he is still pleased with the results obtained by it, and thinks it is not sufficiently well-known, he repeats the description. The operation is performed under local anæsthesia (cocain as drops for the conjunctiva and hypodermically for the skin). The steps are as follows: (1) the pad of thickened conjunctiva always present in these cases is excised with scissors; (2) a triangular piece of skin and orbicularis, equilateral or isosceles according to the amount of deformity to be corrected, with the centre of its base 5 mm. or 6 mm. from the external canthus is excised; (3) the centre of the base of the exposed area is sutured to its apex with silk, and stitches are inserted to keep the edges of the skin in apposition, so as to leave a V-shaped wound with its apex outwards. The sutures are taken out on the fourth or fifth day. The amount of skin to be removed is estimated by picking up in a forceps a fold big enough to correct the ectropion almost completely without at the same time pulling the eyelids at the external canthus away from the eyeball. The edges of the conjunctival wound should not be sutured. In the original operation the apex of the excised triangle points directly outwards, but when the deformity is not very marked, it is sometimes advantageous to place it upwards and outwards, as suggested

(*) *Arch. d'Ophtal. et Société d'Ophtalmologie de Paris*, 1896.

by de Obarrio, of San-Salvador. Before performing the operation, any lacrymal obstruction which is present should be cured. The method is not applicable if the ectropion depends on facial paralysis, or if the skin is deficient.

R. J. COULTER.

(11) After alluding to the modifications in Critchett's iridodesis made by Förster, Snellen, and de Wecker, **Sattler** glances at its dangers and traces the causes of its virtual abandonment. He believes, nevertheless, that the operation has great advantages in subluxation of the lens, and in support of that view relates the following case: a girl, aged 15 years, had both lenses dislocated upwards and outwards as a congenital condition. With $-2.0 \text{ V.} = 1/10$ to $1/6$. Each eye was operated on by a modified iridodesis, so that the pupil was displaced up and out. In the result R.V. (corrected) $= 1/3$ and L.V. (corrected) $= 1/4$. Jaeger No. 3 could be read.

(12) **Captain A. J. Hull** advises that in adults canthoplasty should be performed the moment the diagnosis of purulent ophthalmia is confirmed by the discovery of gonococci in the discharge from the inflamed eye. Sutures are not employed. After the operation the best results are obtained by continuous irrigation with weak antiseptic solutions and the application of protargol, 50 %.

(13) **Lagleyze's** method is a modification of that of Anagnostakis. He takes a long suture, armed with multiple needles (for severe cases as many as six), and, having everted the lid, passes them up from the superior border of the tarsus, on its anterior surface, to the grey line of the free edge of the lid, where they emerge. He then divides the "cartilage" freely, from end to end, and, cutting the loops of the sutures that have been held meanwhile in the needles, he ties the adjacent ends over a roll of gauze. The cartilage is thus forcibly straightened, and held in its new position until the incision has been filled up by new connective tissue; this, it is supposed, will keep the wound gaping.

HAROLD GRIMSDALE.

(14) **Fage** discusses the effects of iridectomy in superficial and semi-transparent opacities affecting the pupillary region of the cornea, where sight, although not abrogated, is yet compromised seriously. Opacities of the kind indicated give rise to dazzling, and tend to produce myopia also. After glancing at the effects of lenses and stenopaic apparatus in these cases, Fage sets out to enquire how far iridectomy is likely to be of service. The artificial pupil, as he points out, augments astigmatism and

accentuates dazzling. The aim should be not to open a new passage for the rays of light, but rather to minimise the diffusion of imperfectly refracted rays, since the latter are the main cause of the disturbance of sight. From this point of view, the operation of tattooing, as pointed out by de Wecker and other writers, is capable of rendering great service. The iridectomy, according to Fage, should be placed behind that portion of the cornea which manifests the smallest amount of irregularity, if possible in the internal or infero-internal segment, and it should always be as small as possible. Benefit often follows the combination of iridectomy with tattooing. Then, there is the question of operating upon one eye whilst the other is sound. The decision depends upon several points, as, for example, the vision of the defective eye and the professional requirements of the patient, the degree of correction possible by means of lenses, and, lastly, the condition of the eyes with respect to binocular vision. S. S.

(16) In the course of a well-written and interesting clinical lecture, **Ramsay** discusses some of the more important and commoner emergencies likely to be met with in eye work, such as wounds of the eyelids, burns of the conjunctiva, injuries to the cornea, intraocular hæmorrhage, and acute glaucoma. With reference to the last-named disease, if the practitioner cannot obtain skilled help, Ramsay advises scleral puncture. This simple operation is practically free from danger, and it will afford relief until such time as the services of a specialist can be obtained.

(18) Recalling the good effect of electrolysis in the treatment of granulations, **Gallemaerts** undertook the destruction by the same means of the conjunctival papillomata in three cases of spring catarrh. He administered chloroform, everted the eyelid, and removed the papillomata with the knife, and then applied unipolar electrolysis, by means of a copper needle, to each of the little pits left by removal of the growths. A current of two to three milliamperes was passed for several seconds. After electrolysis the excrescences did not recur. Several sittings are necessary to complete the cure.

VII.—GENERAL ANAESTHESIA.

Chaldecott, J. Henry.—Remarks upon ethyl chloride as a general anæsthetic. *Reports of the Society for the Study of Disease in Children*, Vol. IV (1904), p. 8.

Chaldecott has employed ethyl chloride as general anæsthetic on an extensive scale, and as the result of his experience regards it as an almost ideal anæsthetic for suitable

cases. For its administration he employs a slightly modified Ormsby's ether inhaler, made by Krohne and Sesemann, of London. With regard to somnoform, Chaldecott says that it has no single advantage over ethyl chloride, and compares unfavourably with it in smelling nasty, and in leaving an unpleasant garlicky taste in the mouth. Neither is there, he continues, any advantage in using a mixture of drugs when a single one answers the purpose equally well, if not better.

Hewitt, Frederick W.—Clinical observations on the anæsthetic effects of methyl oxide, ethyl chloride, and the so-called "somnoform." *Lancet*, November 19 and 26, 1904.

In view of the importance which quickly-acting general anæsthetics are assuming in eye work, it may be interesting to quote **Hewitt's** conclusions with regard to three of these agents, namely, methyl oxide, ethyl chloride, and "somnoform." *Methyl oxide (methyl ether).*—Mixtures of methyl oxide and air sufficiently concentrated to produce satisfactory anæsthesia are too pungent to be pleasant. The anæsthesia is of light type, and is not uncommonly followed by nausea and distress. In the few cases in which Hewitt used methyl oxide there were no indications whatever of danger. *Ethyl chloride.*—This is a useful anæsthetic in certain cases. Its chief drawback lies in the frequency with which it produces headache, nausea, vomiting, and a characteristic but indescribable feeling of depression. Its portability and simplicity of administration are important advantages, especially in country practice and in crowded out-patient departments. The best results are obtained by an apparatus devised by Hewitt which allows of a gradual addition of ethyl chloride vapour to a known volume of air, breathed backwards and forwards. By adding ethyl chloride to nitrous oxide a very deep form of anæsthesia can be produced with extraordinary rapidity. This method, according to the author, has the advantage of inducing consciousness more pleasantly than with ethyl chloride alone. *"Somnoform."*—This agent does not produce such good results as pure ethyl chloride, and is distinctly more dangerous, three deaths at least having already taken place from its administration in Great Britain. The effects produced by the two agents, however, are very similar.

REVIEWS.

Die Erkrankungen des Auges im Zusammenhang mit anderen Krankheiten.—Von PROF. SCHMIDT-RIMPLER in Halle a. S. Second Edition, 619 pages. Wien: 1905, Alfred Hölder. Price, 13 marks.

All one expects from a second edition of a good book is to meet such additions to its original excellencies as are necessitated by the progress of science, an expectation entirely fulfilled in the second edition of Schmidt-Rimpler's excellent work on the relation of eye-diseases to general medicine. No paper of importance bearing on the subject will be found omitted. But it is not in this respect that the chief merit of the book before us lies: there are other German works in which the bibliography is more exhaustively incorporated; it is rather to be found in the personality of the writer, which impresses itself throughout upon the reader. This personal element forms a connecting link between the varied subjects treated, which thus become parts of a whole. Many of the author's cases are quoted in detail, and his judicial criticism makes the book particularly useful and attractive. If any suggestion might be allowed, it would be that a special chapter should be devoted to senile changes in the eyes. In spite of Cicero's apology, old age might in this relation rank as a disease.

C. MARKUS.

Contribution a l'étude de la Tuberculose de l'iris. Thèse de Lyon, 1905. Par EDOUARD SEILLON. Lyon: imprimerie R. Schneider, Quai de l'Hôpital, 9.

Seillon admits four clinical varieties of tuberculosis of the iris: simple granulations, conglomerate granulations, tuberculous abscess, and scro-plastic iritis. The best treatment, as a rule, is enucleation, but one must avoid undue haste, inasmuch as instances are on record of undoubted cure. The author quotes the case of a child, aged 11 years, from the *clinique* of Professor E. Rollet, to whom, by the way, he dedicates his thesis. The affection had commenced four weeks before the patient came under observation, with slight ciliary redness, and dulness of the cornea, which had lost its surface polish, and manifested several whitish deposits in its thickness and some small greyish points on its posterior surface. There were small deposits in the anterior chamber lying between the iris and the cornea. These masses were yellow towards their centre, and vascularised towards their margin. A greyish nodule was situated in the discoloured iris. The neoplasms grew so much as to threaten to perforate, so that the eye was enucleated. The eye was fixed in formol and

embedded in celloidin and cut for the microscope. The small tubercles were made up of giant cells, together with epithelioid cells, of which excellent illustrations are given. Multiple tubercles were present in the iris, ciliary body, ciliary muscle, and choroid.



The accompanying illustration (taken from the monograph) shows the naked-eye appearances of the tubercles of the iris and ciliary processes.

On becoming Blind: Advice for the use of Persons losing their Sight. by Dr. EMILE JAVAL, Paris, France. Translated by Carroll E. Edson, A.M., M.D., Denver, Colorado, U.S.A. Small 8vo., pp. 191. New York: The Macmillan Company, 1905, Price \$1.25 net.

A good book by a good man !

One of us—one of the best and the greatest of us—turns from his own affliction, and from personal experience, teaches us and the world at large to understand what is the best in life for those, who, like him, have been suddenly stricken blind. His life, robbed of what it has so freely given to others, is, through its love for the welfare of those who are similarly afflicted, being daily devoted to the very highest and the most important fields of ophthalmic study and advice. What a lesson to those who unthinkingly cry out against their lesser misfortunes.

Every sentence in the book is pregnant with sound advice to both the practitioner and the patient; every line in each sentence is a measure of an individual knowledge; and every

word in each line is the living expression of a firm hold upon all that is best in life. The interlined pathos of the work, and the labour of love it expresses, are the greatest monuments of courage and nobility that have yet appeared in modern ophthalmology.

Read and re-read, as it has been, by the more than humbled reviewer who had been previously wrapped up in his own few and relatively unimportant sorrows; the very copy of the work guarded as the most precious possession of a large special library; and each lesson therein contained, made one that he has already employed in its many details for the good of others—it has to him proved a blessing. Truly, the work is Javal's greatest gift to mankind.

To those about us here who cannot make use of the original, many obligations are due to Dr. Edson for giving such an excellent translation and for offering a rendering which is free from all idiomatic expression, and yet, one which includes every necessary detail in smoothly running sentences. The American editor has done his work well, and has thus helped to further the noble purpose of a good and a great man to whom affliction has been necessary that such a book could be written.

C. A. O.

Atlas and Epitome of Operative Ophthalmology. By PROFESSOR O. HAAB, of Zürich. Authorized translation from the German, with editorial notes and additions. Edited by G. E. de Schweinitz, A.M., M.D. Philadelphia, New York, and London: W. B. Saunders and Company, 1905. Pp. 377.

An excellent translation of Professor Haab's *Atlas und Grundriss der Lehre von den Augenoperationen* has been recently issued by the publishing house of Messrs. W. B. Saunders and Company. The editor, Dr. G. E. de Schweinitz, of Philadelphia, U.S.A., has inserted a few judicious notes, criticisms, and addenda, but to all intents and purposes, English readers have before them a literal translation of Professor Haab's admirable guide. The English of the translation is distinctly above the average of such work, and it is indeed seldom that one happens across an expression such as "every hundred eyes performed on for cataract" (p. 34). The pictures, especially the thirty lithographic plates, are quite equal to those in the original German edition.*

*For review of the German edition see THE OPHTHALMOSCOPE, August, 1904.—*Editors.*

E. Merck's Annual Reports, vol. XVIII, 1904. Darmstadt, May, 1905.

Merck's Annual Reports for the year 1904 (a well-printed volume of 241 pages), has reached us. It is, as everybody knows, an indispensable book of reference, which nobody need neglect, inasmuch as a copy is sent free to any medical man who takes the trouble to apply to No. 16, Jewry Street, London, E.C. The reports furnish a brief and impartial review of the therapeutic acquisitions of the past year, irrespective of their source, whether from Darmstadt or otherwise. It is pervaded by a spirit of scientific impartiality, a point that renders it especially valuable to medical men. Among the medicaments mentioned as particularly likely to interest ophthalmic surgeons may be mentioned — adrenalin, paranephrin, anæsthesin, collargol, aspirin, mesotan, atropine methylbromide, cuprocitrol, dionin, eucain lactate, hermophenyl, isophysostigmine, jequiritol, methylene blue, perhydrol, pyoktanin, pyramidon, thiosinamin, trigemin, veronal, and others, to say nothing of Römer's pneumococcic serum and Menzer's streptococcic serum.

Tower Skull or Oxycephaly. Contribution à l'Etude des Lésions Oculaires dans les Malformations Crâniennes spécialement dans l'Oxycéphalie. Par André Patry. Paris, 1905 : G. Jacques, 14, Rue Haute Feuille.

Cases of the curious deformity of the skull, known in Germany as Turmschädel, and in England by the somewhat unfortunate name of oxycephaly, are probably not so rare as published statistics seem to indicate. In the monograph under review, M. Patry reviews fifty-eight published cases and adds to this ten cases of his own, making a total of sixty-eight. Several of M. Patry's cases show the deformity in quite a minor degree, and there seems to be little doubt, but that careful investigation would reveal many other cases in which the deformity might be overlooked, and yet, showing it in a slight degree, at the same time showed the ocular and cerebral symptoms associated with the deformity. In its most typical manifestation the appearance presented by the patient is very striking (*see* figures). The large proptosed eyes, often with a marked divergent strabismus, the absence of the supra-orbital ridges, and the dome-shaped mound rising up from the forehead and separated from the temples by shallow furrows, form a picture which when once seen it is impossible to overlook or to forget. Associated with this cranial deformity, there is an atrophy of the optic nerve, which would seem from the evidence presented by M. Patry to be post-neuritic in type. In seven cases the eyes have been examined during the actual

progress of the neuritis. In four of these, both eyes were affected, and in the other three, the second eye had already passed through the inflammatory stage, and settled down into an atrophic condition. The descriptions given by many of the earlier observers of the appearance of the discs also go to show that in most cases the atrophy is consecutive. Relatively good vision is maintained in many cases.

The exophthalmos seen in the majority of the cases is due to the same malformation of the orbit as causes the partial obliteration of the supra-orbital ridge. The upper wall of the orbit,



SLIGHT GRADE OF OXYCEPHALY.

(Reproduced from Dr. Patry's Monograph.)

instead of passing backwards with an inclination downwards of less than 30° to meet the floor of the orbit, passes down with an inclination sometimes of over 45° , with the double result that the whole orbit is much shallower than usual, and the angle formed with the ascending portion of the frontal bone much less salient than it should be. Probably, also, this orbital deformity gives rise to defective action of the ocular muscles and the squint, which in the greater proportion of cases is one of marked divergence. Nystagmus is found in many cases, but seemingly only when blindness or very defective vision has set in during early infancy.

Many of these patients suffer greatly from headaches, and frequently it is found that in childhood they have suffered from fits of some kind, but their intelligence is usually normal, and M. Patry cites several cases in which it was most distinctly

super-normal. Amongst these may be mentioned Sir Walter Scott, Humboldt, and Paracelsus.

The cranial deformity appears to commence in the first year of life, and to be due to the premature synostosis of the coronal and sagittal sutures. The brain, unable to expand in a normal fashion, seems to be driven up into the supra-frontal portion of the skull, and examination of the vault shows that the convolution markings are very deep in the bones in this neighbourhood. The neuritis in most cases develops before the fifth year of life.



MARKED GRADE OF OXYCEPHALY.

(Reproduced from Dr. Patry's Monograph.)

M. Patry strongly favours the view—advanced first by Virchow and later by Hirschberg—that a meningitis is the primary cause of both the cranial deformity and the optic neuritis. It is impossible in the space at my disposal to enter fully into the discussion of the various views which have been advanced, but I agree fully with the author in considering Virchow's hypothesis the most sensible.

M. Patry's monograph concludes with an excellent *résumé* of all published cases and careful accounts of his own series of cases, and also of some other cases of allied skull deformities associated with ocular defects. He also gives a very interesting series of photographs (of which some are reproduced above) showing various degrees of this most interesting deformity.

LESLIE PATON.

NOTES AND ECHOES.

ON August 4th last, the Heidelberg Ophthalmological Society awarded the v. Graefe medal to Professor **von Graefe Medal.** Hering, of Leipzig, in recognition of his meritorious work and discoveries in physiological optics.

* * * *

Obituary.

THE death of Dr. C. Schweigger, a German ophthalmic surgeon of world-wide reputation, is announced at the ripe age of 75 years.

In 1871 Schweigger succeeded v. Graefe as Professor in Berlin. He was joint editor of the *Archiv für Augenheilkunde*, as well as the author of the popular text-book *Handbuch der Augenheilkunde*, and of several monographs. Of the latter one of the most important was his *Klinische Untersuchungen über das Schielen* (1881), which was translated into English and edited by Mr. Gustavus Hartridge a few years after its publication in Germany. Owing to failing health, the late Professor retired from active work some six years ago. Another ophthalmologist, Dr. Paul Schubert, of Nuremberg, has passed away at the age of 56 years. Nearer home, we deplore the death of Philip Henry Mules, a striking and handsome figure at ophthalmological meetings in this country. Dr. Mules' contributions to the literature of his speciality were both numerous and important, and included several papers of sterling merit read before the Ophthalmological Society. His chief claim to fame, however, may be said to rest on two operations, namely, evisceration of the eyeball, with the subsequent introduction of a glass sphere, and the ingenious wire operation for the relief of ptosis, the details of which were communicated by him in 1894 to the International Congress of Ophthalmology in Edinburgh. For many years Mules was surgeon to the Royal Eye Hospital in Manchester, where he achieved a great and deserved reputation. After leaving that city he resided at Gresford, Denbighshire, where he died somewhat suddenly on September 1st, at the age of 62 years. At the time of his death he was ophthalmic surgeon to the Wrexham Infirmary. To the widow and six children, THE OPHTHALMOSCOPE tenders sympathy for the loss of a distinguished husband and father. R.I.P.

**The municipalisation
of Medicine.**

FROM our contemporary, *American Medicine*, we gather that the municipal authorities of Zürich, Switzerland, have municipalised medical practitioners. Henceforth that delightful city will be a closed corporation so far as doctors are concerned. The city fathers have approved forty members of the profession, and have assigned to each the princely salary of £500. They are expected to attend to patients "free, gratis, and for nothing," to employ a familiar phrase. The necessary annual fund is to be raised by a poll-tax of four francs on each of the 112,000 inhabitants of Zürich. The experiment will be watched with interest. By some it will be regarded as merely a step towards the commonwealth that has been the ideal of many social philosophers. We presume that the forty practitioners include an ophthalmic surgeon.

* * * *

**A New
Medical Journal.**

THE first number of a new monthly medical periodical, *The Transvaal Medical Journal*, dated August 1st, 1905, has reached us. It is published under the auspices of the Transvaal Medical Society. From what is somewhat quaintly termed the "Introductory," we gather that since the South African War there has been a large influx of practitioners into the Colony, and also that the local Medical Society has begun to occupy a position commensurate with its intrinsic importance. The new journal has been founded in order to keep pace with the growing numbers and importance of the medical profession in our latest Colony. Now that the profession in the Transvaal has raised its voice, we trust it may not be altogether that of one crying in the wilderness. The offices of the journal: 77, Jeppe Street, Von Brandis Square, Johannesburg. Heartiest good wishes and congratulations!

* * * *

**La Fondation
Ophtalmologique.**

A FEW months ago we gave in these columns brief particulars of the new eye hospital at Paris, *La Fondation Ophtalmologique*, founded under the provisions of Baron Adolphe de Rothschild's will. An illustrated brochure by Dr. A. Trousseau, who was nominated medical director of the institution by the Baron, has reached us. It gives full particulars of the new foundation, both from the structural and the administrative point

of view. One gathers from Dr. Trousseau's description, that a more or less ideal institution has been erected at the corner of the Rue Manin and the Rue Priestley, at the very gates of the Buttes Chaumont, in the crowded and poverty-stricken Belleville quarter of Paris. The building (made, by direction of the founder, to look as little like a prison or a railway station as possible) was commenced in July, 1902, the architects being MM. Chatenay and Ronyre. It lies eighty mètres above sea level, is surrounded by a garden of 4,558 mètres, and, owing to its position, is readily accessible by the poorest population of the great city of Paris. It contains sixty-two beds, of which we note with approbation that twelve are reserved for children and adolescents up to the age of sixteen years. These twelve beds are arranged in two wards, each with six beds, one for girls and the other for boys. Provision has been wisely made for the reception, if necessary, of more patients, without having to effect structural alterations in the building. The hospital contains, of course, a library and museum and a clinical laboratory, and, what is less common perhaps in such an institution, photographic and x-ray rooms, and an elaborate installation of electro-magnetic appliances for medical and surgical purposes. Patients are received at 9 a.m. and at 1 p.m., and thrice a week at 7 p.m. The evening consultation, of course, is intended for workpeople who are occupied during the daytime. No charge whatever is made, and it is to be particularly noticed that so-called "paying patients"—those frauds upon a charitable public and a patient profession—are not admitted to the *Fondation Ophthalmologique*.

* * * *

**Metropolitan Asylums
Board.**

THE *Report* of the Metropolitan Asylums Board for the year 1904 (which has recently been issued) contains certain particulars likely to be of some little interest to the readers of THE OPHTHALMOSCOPE. In 1897, it will be remembered, the duty of looking after certain classes of parochial children, namely, those diseased or mentally afflicted, was entrusted by the Local Government Board to the Asylums Board. Among these children were those who suffered from contagious diseases of the eyes. In order to deal with these cases, two hospital-schools were erected, one at Swanley and the other at Brentwood—that is to say, about as far apart as they could possibly be

placed, although common sense would have suggested that the two institutions should be within convenient distance of one another. As seems to be the usual practice with the Asylums Board, the money spent on these buildings was out of all proportion to what was really needed. For example, no less a sum than £119,707 8s. 3d. was spent upon the Swanley institution, and if to that be added the cost of the site (£5,050), the amount per bed, exclusive of furniture, works out at £347. It is pretty safe to say also that such extravagance does not begin and end with details of construction, but that it extends equally to the proportion of staff to inmates, concerning which the silence of the *Report* is more convincing than many words. The Swanley institution was opened for the reception of children in March, 1903, after a delay on the part of the Asylums Board amounting to no less than six years, and the other place in July, 1904. Then arose a difficulty that should have been foreseen and guarded against long ago, namely, how to fill the several hundred beds rendered available by the opening of both schools. The Children's Committee of the Board, with an assurance bred of an almost child-like ignorance of the facts, thought that the total number of cases of poor-law ophthalmia, exclusive of those already secluded in the Swanley school, "could scarcely be estimated at much, if any, more than 150" (p. 25). This estimate at once showed that the Committee, whatever acquaintance it may have had with its own institutions, had utterly failed to grasp the problems of ophthalmia as they prevail amongst the poor-law population of the metropolis. In casting about how to fill the vacancies created by the opening of the second establishment, several sapient suggestions seemed to have occurred to this precious Children's Committee. These included the reception of Roman Catholic children suffering from ophthalmia, a class already provided for by the Catholics elsewhere under auspices probably quite as good as any that can be offered by the Asylums Board in their munificent buildings. Another suggestion was the reception of ophthalmic children outside the metropolis, a thing never contemplated in the original scheme of Mr. Chaplin. The third suggestion put forward by the Committee was to receive children under three years of age, who are at present wisely kept out of most of the large separate schools and out of all the so-called District Schools of London. As probably everybody except the Asylums

Board knows, these young children when aggregated in a residential school, are the source of almost every outbreak of measles, whooping cough, and scarlet fever. They are quite the most dangerous material that any school medical officer can have to deal with. Appreciating the difficulty in which the Asylums Board found themselves, the Local Government Board obtained returns from the various Guardians of the Metropolis with regard to the prevalence of ophthalmia among the children under their charge. According to these returns (which certainly would not overstate the facts), there were 384 cases of ophthalmia outside the Asylums Board schools, to say nothing of cases in the proprietary schools. Under these circumstances the Local Government Board wisely insisted upon the necessity of a liberal margin of accommodation for emergencies and for classification. The truth of the matter seems to be that the metropolis now contains as many cases of trachoma as it did in 1896, when Mr. Sydney Stephenson found that no less than 5.72 per cent. of the 17,002 children examined were suffering from the disease in an active state. To put the matter briefly, the machinery for isolating such cases has been provided by the Asylums Board, but means are still lacking of persuading the guardian bodies to avail themselves of the accommodation thus provided. There is one means only of attaining this end, as was pointed out by Mr. Stephenson some years ago, and that is by the appointment of a skilled inspector, who should make periodical visits to the different poor law institutions and examine the eyes of every inmate. By a slight modification of the existing law, or rather by enforcing the law as it at present stands, the guardians could then be compelled to send every diseased child to the hospital schools now provided for them. If guardians took a sensible view of the situation, they would see at once that under any circumstances they now pay, according to their rateable value, practically the entire cost of the Asylums Board institutions, whether they send children to them or not. As matters stand, the Board has superabundant accommodation for ophthalmic children, although there are reasons for believing that such children remain bottled up in infirmaries and workhouses, where they occupy room never intended for them, or, worse still, are allowed to run about in poor-law schools to the manifest danger and detriment of the other inmates. It is clear to demonstration

that means should be instantly devised to compel the latter class to enter the isolation-schools established at great and needless cost to the long-suffering ratepayer of the metropolis. If this be not done, there will always be a waste of costly room, and, still worse, we shall never be any nearer to the solution of the great problem that has vexed the minds of poor-law administrators for generations, *viz.*, the extirpation of trachoma from the parochial institutions of London. In that event the public moneys so lavishly expended by the Asylums Board might as well have been thrown into the river Thames for all the public good they will accomplish !

* * * *

IN view of the somewhat burning question

Trachoma and Aliens. of alien immigration, special interest attaches to a memorandum recently issued by the Medical Officer of Health of Glasgow, dealing with some phases of alien trachoma. As the matter is of importance from both its political and its social aspects, it may be of some interest to discuss the issues raised by this official document. Almost at the outset we are faced by the extraordinary statement that trachoma is "not endemic among even the poorest of the native population of Great Britain." The briefest acquaintance with the poor of London, Dublin, Glasgow, Manchester, and Liverpool, not to mention many other large towns, must show the essential fallacy of any such proposition. Then the writer goes on to say that trachoma "although infectious, is not explosive in its action, and unlikely rapidly to affect any large number of the population." As a matter of fact, if introduced into barracks, infirmaries, orphanages, schools, or other places bringing together large numbers of inmates, it becomes one of the most typically explosive, or fulminating, of all maladies. It seems clear, therefore, that if we are asked to accept bald statements such as the foregoing as fundamental principles, the subsequent *Report* must rest on a somewhat insecure basis. When we come to statistics, we have the same looseness of treatment. "City emigrants" are aliens who describe themselves as resident or employed in Glasgow. The incidence of trachoma in that and other classes is given thus :—

				Rejections per month.
Country emigrants	...	...	...	23
Through transmigrants	...	...	...	10
Two-stage transmigrants...	...	...	...	5
City emigrants	...	...	...	1

But little meaning can be attached to these figures, however, for the simple reason that the total number of emigrants is nowhere stated. The general conclusion from the fact of the investigation is "that trachoma is more prevalent among candidates for emigration who have been resident for definite periods in Scotland than among transmigrants who are merely passing through the district, and, further, that there is no evidence of notable trachoma among Glasgow aliens." Surely, this view traverses the theory of the absence of endemic trachoma in part, at least, of the United Kingdom. Later in the *Report* we find the subject of the fulminating infectivity of trachoma again discussed. In this place the general proposition is carefully qualified by the statement that "not casual intercourse but a state of common living and housing, is the class of circumstance that favours its transmission." With that reservation, there will be no difficulty in accepting the conclusion that the introduction of a few cases into a district is not sufficient to ensure a wide extension of the malady. We must emphatically dissent from the reiterated and forcible assertion at the end of the *Report* that trachoma is not "naturally" endemic in Great Britain. The author says that it has "up to the present been properly a disease of the aliens. Introduced by the aliens, it is propagated by the aliens, and is also, under suitable conditions, transmitted by the aliens to the people of this country." Such a doctrine is, in our opinion, misleading and dangerous. Like many other maladies, it may have hailed originally from the East, but it has for untold generations maintained a firm foothold among the very poor within our own gates. Expulsion is needed to stamp out trachoma far more than exclusion.

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VOL. III.—No. II.]

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[ONE SHILLING]

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ORIGINAL COMMUNICATIONS.

A CASE OF CEPHALIC TETANUS FOLLOWING A CONTUSION WOUND OF THE OUTER CANTHUS.*

BY

A. MAITLAND RAMSAY, M.D.,

FELLOW OF FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW; SURGEON TO
THE OPHTHALMIC INSTITUTION, GLASGOW ROYAL INFIRMARY.

The following case of tetanus differs considerably from the ordinary type, chiefly in the distribution of the symptoms, which were, for the most part, localised in the facial muscles of the right side. The patient was a woman, J.M., 23 years of age, who was on the 21st September, 1904, sent by Dr. Thomas Dunlop, Thornhill, Dumfriesshire, to consult me at the Glasgow Ophthalmic Institution. Four days previously she had been struck on the right eye with a walking stick, and on admission to the Hospital was found to have a suppurating wound extending

*Read on November 18th, 1904, at a Meeting of the Glasgow Medico-Chirurgical Society.

for about $\frac{3}{4}$ inch outwards from the external canthus of the injured eye. There was no corneal injury, but there was extensive chemosis of the bulbar conjunctiva, which covered the cornea over its outer half, and ecchymosis of the lids, and swelling extending over most of the right side of the face. The intra-ocular tension was normal; the anterior chamber of natural depth; the pupil dilated and irresponsive to light; the fundus oculi could not be illuminated; and all perception of light was lost.

About three days after admission the patient began to complain of stiffness of the lower jaw, especially on the right side. As no maxillary injury could be detected, this at first did not attract much attention, and was attributed to the extensive swelling and bruising which involved the whole of the right side of the face. Although, however, the swelling gradually subsided, the stiffness became steadily worse, and by the 28th September, it was manifest that the condition was serious and strongly suggestive of trismus. The patient could then open her mouth only on the left side, and the right corner drooped towards the chin. All the muscles on the right side of the face were paralysed, but owing to the injury and swelling, it was difficult to determine the degree of the palsy of the orbicularis, and the labio-nasal fold was never completely obliterated. The occipito-frontalis was also involved, and the wrinkles on the left side of the face were much more marked than those on the right. On both sides the knee-jerks were exaggerated, and ankle clonus was present.

On the following day there was complaint of stiffness of the right trapezius, and as fears were now entertained that the case would turn out to be one of general tetanus, Dr. Knox was called in consultation, and Dr. Campbell McClure was asked to prepare a culture of the discharge from the wound. Dr. Knox's examination revealed a sinus leading down to bare bone at the malar process of the superior maxilla. The bacteriological investigation demonstrated the presence of the tetanus bacillus in large numbers. The injection of anti-tetanic serum was at once commenced, and for two days the conditions remained practically unchanged. On the evening of the 1st October, however, while the eye was being douched and the sinus syringed, the patient had an attack of laryngeal spasm so severe while it lasted that it was feared she would die of suffocation. In a few minutes, however, the muscles relaxed, but shortly afterwards, while the girl was taking a drink, she was suddenly seized with slight spasm of the pharynx, similar to that which occurs in hydrophobia.

The serum injections were continued, and chloral prescribed in large doses; and on the following day the tonic contraction

of the muscles of mastication was distinctly less, although there was again a tendency to the occurrence of spasmodic dyspnoea when the wound was being dressed. The attack was not, however, nearly so severe as that of the previous evening, and it never recurred. In fact, from this time onward there was steady improvement, and after the 3rd October the injections were intermitted for six days. During sleep the muscles relaxed so much that the mouth remained open, but on waking there were still occasional spasmodic contractions of the muscles of mastication, and several times the patient bit her tongue severely. As the discharge was not escaping freely from the sinus at the right outer canthus, Dr. Knox made an opening through the skin, and inserted a drainage tube. After the beginning of November there was steady progress, and there is now (18th November) little difference between the two sides of the face, although the right occipito-frontalis does not act so well as the left. There is still slight discharge from the wound, but the conjunctiva is almost quite clear, and a few exuberant granulations at the outer canthus have been snipped off. The electrical reaction of the facial muscles on the right side is normal, but the response to both galvanic and faradic stimulation is more sluggish than on the left. With the right eye the patient can determine hand movements at six feet, and count fingers at two feet ; but as she is unable to detect the discs on the test square used with the perimeter the field of vision cannot be satisfactorily mapped out. Ophthalmoscopic examination shows the media to be perfectly transparent, and while little abnormal is to be detected in the appearance of the optic disc and retinal blood-vessels, a rupture of the choroid is seen to extend downwards and inwards in the region of the macula.

Remarks.—Considering the large percentage of these cases that prove fatal, such a complete recovery is very gratifying. In this instance it is probably in a large measure to be attributed to the use of the anti-tetanic serum, which was administered seven times to a total amount of about 150 cubic centimetres. Distinct benefit followed every injection after the third. The patient was throughout kept quiet, well nourished (careful attention being paid to the action of the bowels), and chloral in large doses was given to secure rest and sleep, the total amount of this drug used between the 29th September and the beginning of November being 3,000 grains. For the first 16 days 150 grains were taken every 24 hours. The patient's strength was well maintained throughout ; the pulse averaged about 90, and temperature was always normal.

I am indebted to my house surgeons, Dr. Young and Dr. Hutton, for the careful notes they have made of this case.

THE RELATION OF THE FACTS OF COLOUR BLINDNESS TO THE PSYCHOPHYSICAL THEORY.

By F. W. EDRIDGE-GREEN, M.D., F.R.C.S.

There are many practical men who dislike theories, but nothing is more puzzling than a series of unconnected facts. When I first constructed my theory of colour vision I proceeded to test it as I had tested the former theories of colour vision, namely, by seeing what were the necessary consequences of the theory, and whether facts confirmed these predictions. I may say that the facts confirmed the predictions in the minutest particular, and it may therefore be used as a working hypothesis in order to make the facts of colour-blindness intelligible.

The limitation of the number of colour sensations was thought to be necessary because it seemed physically impossible that a single fibre of the optic nerve could convey all waves of light. The facts of colour vision can only be satisfactorily explained on the assumption that each optic nerve fibre does convey impulses corresponding to all waves of light. It occurred to me that if there were a transforming apparatus in the eye we could explain the facts. The telephone shows how this may be accomplished in the case of sound. I saw that the retina was constructed in a manner theoretically perfect from this point of view. The percipient layer of the retina is made up of two kinds of elements, the rods and the cones. The portion of the retina corresponding to the central portion of the field of vision contains only cones. External to this spot the cones are arranged with one or more rings of rods round them, the single ring being round those cones which are nearest to the central portion. In the rods there is a rose-coloured substance, the visual purple, which is very sensitive to light. This photo-chemical substance is found exclusively in the rods. I assumed that light falling upon the eye liberated the visual purple from the rods just as heat would an ointment, and a photograph is formed. The decomposition of the visual purple by light chemically stimulates the ends of the cones, and a visual impulse is set up which is conveyed through the optic nerve fibres to the brain. I have examined the retina of several monkeys after they had been kept in a dark room, and found that the visual purple was to be seen in the yellow spot, but situated between, and not in, the cones. This view gives a reason for a great many facts which were previously inexplicable. For instance, a bright light may fall upon the fovea, without producing any

sensation, and a perceptible interval elapses before we are able to see with the yellow spot, after the remainder of the retina, the fovea being the last point to convey a sensation of light. The first fact we should expect, the cones being insensitive to light. The second corresponds to the diffusion into the yellow spot of the visual purple. All the facts of colour mixing, contrast, and after-images can be explained by the hypothesis that the visual purple is the visual substance. A positive rose-coloured after-image can be obtained after white light, or any spectral colour. The ordinary explanation of this, namely, that the action of the hypothetical red and violet fibres persists longer than those for green, cannot be true, because it is exceedingly difficult to obtain this after-image after spectral-red, and very easy to see it after green. It would be against the whole principle of the theory that the red fibres should be excited most efficiently by green. But if we assume that the visual purple is the visual substance, then we have an easy explanation of the facts.

The fibres of the optic nerve pass to the visual centre. I have assumed that the visual centre transmits to the mind impressions of white light, and that by it objects are seen monochromatically, as in a photograph. The visual centre is, therefore, acted upon by impulses caused by all rays of light, the colour perceiving centre being concerned with the quality of the impulse within the power of perceiving differences possessed by that centre, or portions of that centre.

I will now apply this theory to colour-blindness, and it will be seen that it gives a simple explanation of the facts.

Cases of colour blindness may be divided into two classes, which are quite separate and distinct from each other, though both may be present in the same person. In the first class there is light as well as colour loss. In the second class the perception of light is the same as the normal sighted, but there is a defect in the perception of colour. In the first class certain rays are either not perceived at all or very imperfectly. Both these classes are represented by analogous conditions in the perception of sounds. The first class of the colour-blind is represented by those who are unable to hear very high or very low notes. The second class of the colour-blind is represented by those who possess what is commonly called a defective musical ear. Colour-blind individuals belonging to this class can be arranged in a series. At one end of this series are the normal-sighted, and at the other the totally colour-blind. The colours appear at the points of greatest difference, and I have classified the colour-blind in accordance with the number of colours which they see in the spectrum.

If the normal-sighted be designated hexachromic, those who see five colours may be called pentachromic; those who see four, tetrachromic; those who see three, trichromic; those who see two dichromic; and the totally colour-blind, monochromic. There are many degrees included in the dichromic class. There may or may not be a neutral band, and this is largest in those cases approaching most nearly to total colour blindness. I have recorded a case of a patient who was colour-blind with one eye. It is an interesting fact that for form vision the colour-blind eye was much the better of the two, and he could recognise fine lines in the spectrum with this eye which were not visible to the other. He saw the two ends of the spectrum tinged with colour, and the remainder grey. It will be noticed that his colour sensations were limited to the extreme red and the extreme violet, namely, those colours which present the greatest physical contrast to each other. Neither the red nor the violet appeared of the nature of a primary colour, but gave the impression that they were largely diluted with grey. A theory of colour vision must account for a case of this kind, and also for the other varieties and degrees of colour-blindness. The trichromic are a very important class, and any theory must account for the fact that they see yellow as red-green and blue as violet-green. As we should theoretically expect, when there is shortening of the spectrum the centres of the colours are moved toward the unshortened side.

I believe that shortening of the spectrum is due to some defect in the visual purple, which makes it insensitive to certain rays, but this is quite a distinct view from that which explained the shortening as a defect of the hypothetical red fibres. If the latter view were correct there would be a defect over the whole of the red, but I have examined many cases in which there was shortening of the red end, and the patient was so sensitive to those red rays which he did see that he recognised a feeble red light as easily as persons with a normal length of spectrum. It is the presence or absence of shortening of the red end of the spectrum which has given apparent confirmation to the division into the so-called red and green blind, but why is there a defect in the perception of light in the so-called red blind and not in the so-called green blind? Many intelligent colour-blind persons have persisted that the term dichromic described their vision, and I have shown* that a light-perceiving substance cannot be absent, as their light perception was the same as the normal sighted. It will be seen that the

*Colour Blindness and Colour Perception. International Scientific Series, p. 89.

defect in the second class of the colour blind is in the colour perceiving centre in the brain ; and if it were possible for a normal-sighted person and a colour-blind one to exchange eyes, the colour blind person would still be colour blind, and the normal sighted would still see colours correctly. Colour-blindness of this kind seems to be a state of atavism. The colour sense appears to have been gradually developed, and to have passed through all stages of this variety of colour blindness. I have shown how, in the varying impulses we have the possibilities of indefinite evolution. When the colour vision centre was in an undeveloped state, it could only convey to the mind distinct sensations when the differences were very large, as with the two ends of the spectrum, but as more and more cells were added to the centre the power of perceiving differences improved, and both the red and violet encroached on the grey until they met in the centre of the spectrum, forming the ordinary dichromic class. This view explains the presence or absence of the neutral band of varying size, found in dichromic cases. The next colour, green, is evolved at the centre of the spectrum, vision now being trichromic, the patient seeing in the spectrum, red, red-green, green, green-violet and violet. He says that the red-green and green-violet are not true colours, but present the characters of their components. Then yellow appears at the fourth point of difference, blue at the fifth, and orange at the sixth. In some exceptionally gifted individuals, as far as colour is concerned, a seventh colour is seen at the position of the indigo, but though there is no reason why there should not be such cases, I have not been able to find a person who saw more than seven distinct colours in the spectrum. Those who see seven are very rare.

INFLAMMATORY AFFECTION OF THE CILIARY GANGLION, ASSOCIATED WITH RETROBULBAR NEURITIS.

BY

PERCIVAL J. HAY, M.D. EDIN.

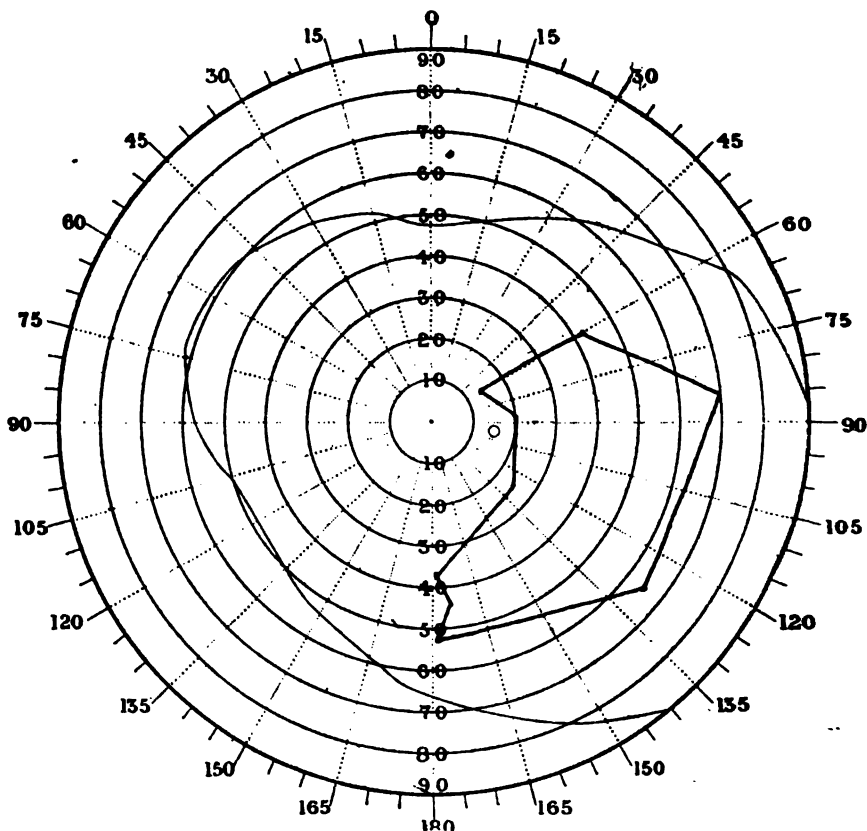
RESIDENT SURGICAL OFFICER, BIRMINGHAM AND MIDLAND EYE HOSPITAL.

No mention is made of an inflammatory, or, in fact, any affection of the ciliary ganglion, in any of the leading textbooks on diseases of the eye, nor have I noticed any reference to the subject in the principal journals of ophthalmology. Yet it seems *a priori* unlikely that this small structure should escape the ills the

body is heir to, any more than other parts. I hope that the following may be instrumental in drawing attention to the occurrence of such cases:—

William H., *æt.* 38 years, came to the Out-Patient Department of the Birmingham and Midland Eye Hospital on October 4, 1904. He complained of a neuralgic kind of pain at the back of the right eye, and of the fact that the sight of the same eye had been failing. The onset of these symptoms occurred about six weeks before the patient's visit to the hospital.

RIGHT.



As regards his previous history, he had contracted venereal disease, probably syphilis, about 17 years ago. For some months before coming to the hospital he had been suffering from chronic rheumatism; otherwise he had always enjoyed good health.

Upon examination, R.V. was found to be less than $\frac{6}{60}$; L.V. was $\frac{6}{8}$.

The right pupil was widely dilated, and did not react to light or accommodation. The consensual reflex was almost imperceptible. The left pupil was of normal size, and reacted well to light and accommodation, but here again the consensual reflex was exceedingly slight.

The right cornea was quite insensitive in some parts and nearly so otherwise, whereas the sensibility of the left cornea was unimpaired.

The fundus appeared normal in both eyes. There was no evidence of any papillitis or neuritis.

The right field of vision showed marked contraction, the area of retained vision being situated on the temporal side of the point of fixation. (*See Fig.*)

There was no proptosis. No diplopia. The ocular movements were complete in both eyes. The knee-jerks were normal.

The patient was ordered pot. iod., gr. x, t.d.

A week later, on October 11, 1904, the right pupil had regained its normal size. It reacted well to light and accommodation; the consensual reflex was good too, in fact better than that of the left pupil, which now also showed the reflex quite well. Sensibility had returned to the right cornea, the right field was full, and right vision had reached $\frac{4}{12}$ fully. The fundus showed no change, either of an inflammatory or a degenerative nature.

The patient was ordered pot. iod., gr. xv., t.d. A fortnight later, on October 26, 1904, right vision had improved to $\frac{6}{8}$. Both pupils reacted well to light, accommodation, and consensually. The right consensual reflex still seemed a little more brisk and complete than the left. The fundus was normal in both eyes.

Remarks.—As regards the diagnosis, three symptoms need to be accounted for—the loss of vision, the impaired sensibility of the cornea, and the paralysis of the sphincter pupillæ.

It is evident, in the first place, that the nervous supply from the third nucleus was disturbed, since the right pupil was dilated and did not respond to the light, accommodation, and consensual stimuli.

A nuclear lesion may be excluded as improbable, since it would almost certainly have led to paralysis of the external muscles of the eye supplied by the third nerve, besides involving both eyes.

That the trunk of the third nerve could not have been the seat of the lesion is equally clear, since none of the external muscles of the eye were deficient in their action. Thus, by a process of exclusion, the ciliary ganglion itself, or the ciliary nerves derived from it, must have been the seat of the lesion. From the fact that there was no papillitis or neuritis, it follows that the affection could not have been near the entrance of the ciliary nerves into the eye-ball, but must have been some distance away.

In order to locate the lesion still further, it became necessary to examine the field of vision. The whole of the nasal half of the field was destroyed, the centre of the field was absent, and the periphery of the temporal half of the field was wanting. It follows that, though the inflammation—assuming that it was an inflammation—extended all round the optic nerve, it involved chiefly the temporal half of the nerve, and penetrated deep enough to involve all the macular fibres.

I think I may say without fear of contradiction that an inflammation of the macular fibres would have certainly been accompanied by arteritis and thrombosis of the central artery, if the neuritis occurred in that part of the nerve containing the artery. Since there was no evidence of thrombosis, the nerve must have been affected behind the point of entrance of the central artery. Thus we arrive at the part of the nerve opposite the ciliary ganglion.

Would an inflammation of the ciliary ganglion and its immediate neighbourhood account for all the symptoms?

It will be recalled that the ganglion is situated on the outer side of the nerve.

An inflammation of the ganglion would account for the paralysis of the sphincter papillæ, since the motor impulses to that muscle pass through the ganglion.

A lesion of the ganglion would account for the great loss of sensibility of the cornea, since the sensory impulses from the cornea pass through the ganglion and its sensory root to the fifth nucleus. All sensation was not lost, because the two long ciliary nerves to the nasal nerve form an additional path for sensory impulses from the cornea.

An inflammation spreading from the ganglion would affect the temporal side of the optic nerve chiefly, and so account very well for the appearance of the field of vision.

I have assumed an *inflammation* of the parts mentioned because the symptoms disappeared with such great rapidity, more rapidly it seems to me than if they had been due to a syphilitic lesion.

The diagnosis, of course, is a tentative one, and I should like to see the *pro's* and *con's* discussed by someone more experienced than myself.

I am indebted to Mr. Henry Eales for permission to publish the case.

CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

A NOTE UPON ALYPIN, A NEW LOCAL ANÆSTHETIC.

BY

SYDNEY STEPHENSON,

LONDON, ENGLAND.

Cocaine, isolated in 1855 by Gadeke, fully described in 1859 by Niemann, and introduced into eye work as a local anæsthetic in 1884 by Koller, has been followed by the appearance of a host of agents that act in a more or less similar way. During the twenty-one years that have elapsed since Koller's far-reaching discovery, many local anæsthetics have been brought under the notice of the medical profession—as, for example, holocaine, tropacocaine, eucaine, yohimbine, and stovaine, to name only a few of those agents. Nevertheless, cocaine retains its position as the local anæsthetic *par excellence* in ophthalmic work, a fact that naturally tempts one to enquire whether its qualities entitle it to its present position.

The ideal anæsthetic, in my opinion, should fulfil three requirements: first, it should exert simply an anæsthetic action; secondly, it should not irritate the eye; and, thirdly, it should be freely soluble in water, economical in price, and non-toxic in use. How far does cocaine fall into line with these several requirements?

As regards its powers of inducing local anæsthesia, there can be no two opinions. Its action is at once rapid, complete, and wholly satisfactory. In that respect it can be excelled by none and equalled by few of the newer agents. At the same time, if the advantages of cocaine are widely known, its defects are also fully recognised by those who employ it on a wide scale. To begin with, it is extremely toxic when injected beneath the skin or the conjunctiva, so that death has been known to follow the introduction into the system of more than one-quarter grain. From this point of view, stovaine and eucaine lactate are better agents, although the injection of an admixture of stovaine and adrenaline (Luke), and even of stovaine alone (Sinclair), has in several instances been followed by local gangrene of the skin. Holocaine is out of the question for hypodermic medication, inasmuch as it acts when applied in that way as a powerful tetanising agent.

A 2 per cent. solution of cocaine hydrochloride, dropped into the eye, causes, in most patients, a certain amount of smarting

and some temporary discomfort. Here stovaine and especially eucaine lactate have a decided advantage. The continued instillation of cocaine is liable to be followed by desquamation of the epithelium of the cornea, although that untoward accident may be avoided if the eyes be kept closed, or an oily, instead of a watery, solution be used. In my experience, stovaine and eucaine lactate are free from this undesirable quality, although, according to de Lapersonne (*Recueil d'ophtalmologie*, août, 1904) and Scrinì (*Archives d'ophtalmologie*, juin, 1905), the former agent does in particular cases give rise to this exfoliation.

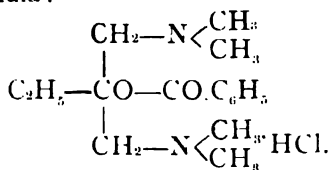
Cocaine frequently produces a medium dilatation of the pupil, a thing not always to be desired, more particularly if there be the least tendency to glaucoma. Holocaine and eucaine lactate have no action whatever on the pupil, but stovaine, as I pointed out some time ago (*THE OPHTHALMOSCOPE*, November, 1904), does dilate the pupil, although to a less extent than cocaine. Perhaps a more serious objection to cocaine lies in its action upon the function of accommodation, thereby in certain cases interfering seriously with sight. Stovaine and eucaine lactate, on the contrary, have not the least action upon accommodation.

By Mellinger cocaine has been stated to retard the cicatrisation of wounds of the cornea, a claim, so far as I know, not substantiated by other surgeons.

Lastly, cocaine is absorbed with difficulty by eyes, the tension of which is raised, or the surface of which is reddened, but that is probably a defect inherent to every agent applied to eyes under such conditions.

To put the matter briefly, cocaine is not an altogether ideal agent for paralysing the ocular sensory nerve-endings, because of the associated and interrelated actions specified above. Still, it is the local anæsthetic habitually employed in England, and seems likely to remain so until some agent is discovered, the advantages of which admit of no dispute.

Among the local anæsthetics I have experimented with (and they are not a few in number) none has yielded me better results than the new product, alypin*, a white crystalline neutral powder, extremely soluble in water, recently introduced by the Bayer Company. This synthetic compound is a glycerin derivative, having the formula :—



* (ἀ-privative, and ἡ λύπη, pain.)

It is the muriate of benzoyltetramethyldiaminoethyl-dimethylcarbinol. It is not precipitated by the alkaline fluids of the human body, and hence it may be assumed to penetrate readily and quickly into such structures as the conjunctiva and the cornea. It is of practical importance to recall the fact that its properties are in nowise impaired by boiling for ten minutes, with the result that it may be sterilised efficiently.

The physiological action of alypin has been investigated by Impens (*Deutsche med. Wochenschrift*, No. 29, 1905), who found that its anæsthetic effects were in no way inferior to those of cocaine. A 1% solution of alypin produced deep anæsthesia of the rabbit's cornea after 50 or 60 seconds. The lethal dose amounts, in dogs and cats, to about double that of cocaine. Thus, in the cat it is 0.06 g. per kilo. of the animal's weight, and in the dog 0.07 g.; while for cocaine it is 0.03 g. in the cat and 0.02 g. to 0.04 g. in the dog.

As regards the eye, the action of alypin has been investigated by von Sicherer (*Die Ophthalmologische Klinik*, August 20, 1905), by Jacobsohn (*Woch. f. Ther. u. Hygiene des Auges*, September 28, 1905), and by Seeligsohn (*Deutsche med. Wochenschrift*, No. 35, 1905). Those observers agree that in alypin the enterprise of the modern synthetic chemist has placed at our disposal a relatively non-toxic agent, the action of which is that of a local anæsthetic, pure and simple.

My personal experiments with a 2% watery solution of alypin now embrace several hundred trials, and extend over some weeks. The new agent has been applied to the eyes of patients of almost every age. The results may be briefly stated as under:—

When the solution is dropped into the conjunctival sac, a certain number of patients complain of a slight smarting sensation, but, upon the whole, this neither occurs so frequently nor is it so marked as when cocaine of corresponding strength is used to the second eye of the same subject. Blepharospasm, also, is less pronounced with alypin than with cocaine. In the course of about one minute (70 seconds as the average of 35 observations), the ocular and palpebral conjunctiva, together with the cornea, have become insensitive to touch, as with the apex of a twisted wisp of damp cotton wool. A few seconds later the ocular conjunctiva may be seized with fixation forceps without the patient experiencing the least pain. At about this time, too, some dilatation of the superficial vessels, especially those surrounding the cornea, may usually be observed, from which it follows that alypin possesses a vaso-dilator action. Obvious distension of the vessels was observed in 90% of the patients in whom the point was specially investigated. In not one of my numerous trials with alypin was dilatation of the pupil produced. As

regards accommodation, careful measurements with the hair optometer failed to reveal the least alteration in the position of the punctum proximum after alypin had been applied to the eye. The condition of the corneal epithelium was investigated by direct inspection with the Berger binocular loupe and by the employment of fluorescein. In no single instance did any disturbance in the epithelium follow the use of alypin. Retraction of the eyelids, the "*aspect hagard*" of French writers, so characteristic of cocaine anæsthesia, was not seen after the employment of alypin. No effect upon tension has been noted.

It will be seen, therefore, that I agree with von Sicherer, Jacobsohn, and Seeligsohn, in regarding alypin as an efficient local anæsthetic, wholly devoid of any other action, except slight vaso-dilatation, upon the human eye.

A word with regard to the use of alypin in practical ophthalmology. The new agent has been used by me as a preliminary to removing foreign bodies from the cornea, and in that direction has afforded complete satisfaction, both to the patients and to myself. For rendering the ocular conjunctiva insensitive before exploring the eye with the transilluminator, it has proved useful. Before the passage of lacrymal probes, the cauterisation of septic ulcers of the cornea, and the division, lengthening, or advancement of a muscle in squint, alypin has proved itself to be quite as efficient as cocaine. I have also performed several iridectomies and discissions and cataract extractions under the influence of alypin. The injection of a few drops of the 2% solution of alypin has enabled me to remove, practically without pain, tarsal tumours. I therefore conclude that in alypin we have an agent that may eventually become a serious rival to cocaine in eye work.

By Jacobsohn (*loco citato*) it has been claimed that alypin is cheaper than cocaine. Enquiries in London, however, show that there is no difference in price between the two medicaments, inasmuch as each costs 10d. per gramme. Compared with some of the other more important local anæsthetics, such as eucaine lactate, stovaine, and holocaine, both cocaine and alypin are slightly more expensive.

ALYPIN : THE NEW LOCAL ANÆSTHETIC.

BY

ROBERT JAGUES, F.R.C.S.,HOUSE-SURGEON TO THE ROYAL EYE HOSPITAL, SOUTHWARK,
LONDON, ENGLAND.

I have recently had the opportunity of testing the qualities of a new preparation known as alypin. It is put forward as a substitute for cocaine in causing local anæsthesia. A 2% watery solution was used, and the first experiment made on myself by instilling one drop of alypin in the right conjunctival sac and one drop of 2% cocaine in the left. The alypin caused slight vaso-dilatation, and rather more smarting than the cocaine, but it quickly produced anæsthesia, and did not cause any dilatation of the pupil. It has now been employed by me in a considerable number of slight cases, such as the removal of foreign bodies from the cornea, the cauterization of corneal ulcers, the removal of stitches from the conjunctiva, and in one case of iridectomy and cataract extraction. In all cases the anæsthesia was satisfactory. In none was any dilatation of the pupil observed, but in most instances there was slight vaso-dilatation. In many instances when using alypin in one eye, a drop of 2% cocaine was placed in the other, and the patients always stated that the alypin was slightly more painful. Alypin can be easily sterilized, since boiling for not longer than five minutes does not appear to alter its qualities.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

I.—PANOPHTHALMITIS AND TETANUS.

Oeller.—A case of panophthalmitis, complicated with tetanus, and terminating fatally. (Ein Fall von Panophthalmie mit Tetanus und tödlichem Ausgang.) *Archiv f. Augenheilkunde*, Dezember, 1904.

Oeller, of Erlangen, describes at some length a case of fatal tetanus following panophthalmitis. A woman, *ætat* 52 years, sustained a penetrating wound of the right upper lid and eyeball from the prong of a hay-fork. Violent retching and vomiting speedily made their appearance. Seen by Oeller two days after the accident, the injured eye was found to be suppurating. There was a large lacerated wound of the cornea, together with prolapse

of the iris. The lens had presumably escaped from the wounded eyeball. Slight exophthalmos and limitation of movement of the globe. The treatment included the application of a warm, moist iodoform-vaseline bandage. On the following day the whole of the right side of the face was swollen. Five days after the accident, the tip of the nose and the angle of the mouth were somewhat drawn towards the left. On the next day this appearance was much more pronounced, and was associated with grinding of the teeth. The ocular inflammation had meanwhile increased in intensity. On the seventh day after the injury, cramp of the masseter muscles was present, so that the mouth could be opened for a few millimetres only. An attempt to feed the patient through a gap between the teeth induced violent spasms of the muscles of the pharynx. T. 37.6° C. P. 120. The diagnosis of cephalic tetanus (*Kopftetanus*) was made on this day. The affected eyeball was enucleated under chloroform narcosis, and placed in Müller's fluid. On the following day, T. 38.5° C., and pulse 124. The slightest sound, touch, or movement set up violent masseter spasm. No opisthotonos. At night, T. 38.3° C., and pulse small and irregular. The patient died next day—that is to say, nine days after the injury to the eye. An incomplete autopsy, made the day after death, disclosed the existence of several lesions, as fatty degeneration of the heart, hypostatic pneumonia, purulent bronchitis, uterine myomata, perimetritis, and chronic salpingitis. Several foreign bodies, encrusted with dirt and vegetable substances, were found embedded in the eye. Bacteriological examination showed the presence of numerous micro-organisms—cocci, chains, and rods—about these foreign bodies, but there were no bacteria in the surrounding parts or in the optic nerve. Tetanus bacilli were not certainly identified.

This typical case of cephalic tetanus raises the question whether death might not have been averted by a more timely removal of the wounded eye. The florid panophthalmitis, present when the patient was first seen, furnished, in Oeller's view, a contraindication to enucleation. Besides, the large opening in the capsule of the eyeball precluded, as it seemed, the illness running a long or very painful course. That the trismus was not recognised earlier was due to the fact that the side of the patient's face was markedly swollen, thus disguising the true nature of the condition. The author, in the course of his further remarks, offers a good many more or less invalid excuses why tetanus antitoxin was not employed in the case. He points out that tetanus after injury to, or operation on, the eye, is a rare accident, and that of the eleven cases so far reported, eight have terminated fatally.

S. S.

II.—TARSITIS.

- (1) **Yamaguchi.**—On syphilitic tarsitis simulating amyloid degeneration. (Ueber tarsitis syphilitica unter dem Bilde der Amyloid degeneration.) *Archiv für Augenheilkunde*, 1904, p. 8.
- (2) **Rollet, E.**—Tuberculous tarsitis. (La tarsite tuberculeuse.) *Archives d'ophtalmologie*, juin, 1905.

(1) **Yamaguchi** describes a case of syphilitic tarsitis in a woman of 56 years. Clinically the case was diagnosed as amyloid degeneration of the upper lids. Both upper lids were markedly swollen, and in the swelling hard nodules of various sizes could be felt. These nodules were removed by operation, and on section, proved to be typically syphilitic, showing no signs of amyloid degeneration. The histological description is very full and careful.

LESLIE PATON.

(2) Syphilitic tarsitis, although by no means a common or everyday disease, is an affection known to all ophthalmic surgeons. **Rollet**, in the present communication, insists upon the fact that a very similar condition may be due to tuberculosis. A woman, aged 27 years, presented an affection of the left upper eyelid, which had commenced four years before with acute conjunctivitis. Since that attack the eyelid had become progressively larger, and had drooped more and more. Upon examination, the left upper eyelid was a little red, tumified, and very markedly thickened. Despite all efforts, it could not be raised voluntarily by the patient. On palpation, there was uniform thickening, and the affected parts felt wood-like. On everting the eyelid, the tarsal conjunctiva was seen to present numerous rounded grey granulations, resembling not trachomatous out-growths, but tuberculous fungosities. The glands beneath the jaw were enlarged. Rollet excised the conjunctival granulations, resected a longitudinal strip of the tarsus, applied the thermo-cautery, and rubbed the parts with mercurial oil. The results of operation were excellent. *Pathological examination*:—The conjunctiva contained embryonic cells, polynuclear and mononuclear leucocytes, and a few giant-cells. One typical tuberculous follicle was found. Sections of the diseased tarsus and conjunctiva showed in a general way that the parts were thickened. The pathological conjunctival process had extended into the tarsus. The thickened tissues of the tarsus included embryonal cells, epithelioid cells, and giant-cells. Experimental proof of the tuberculous nature of the process failed, owing to the fact that the inoculated guinea-pig died from cold some days after the inoculation. Rollet concludes an interesting and practical communication with some remarks upon the diagnosis of tuberculous tarsitis.

S. S.

III.—PULSATING EXOPHTHALMOS.

- (1) **Würdemann, H. V.**—Cure of pulsating exophthalmos by ligature of the common carotid artery. *Annals of Ophthalmology*, April, 1903.
- (2) **Hartridge, Gustavus.**—A case of pulsating exophthalmos (traumatic). *Trans. Ophthalmological Society*, Vol. XXIII, 1903.
- (3) **Frazier, Charles H.**—Presentation of a case of unilateral pulsating exophthalmos. *Trans. College of Physicians of Philadelphia*, 1903, p. 162.
- (4) **Bull, Charles Stedman.**—Case of pulsating exophthalmos of traumatic origin—ligature of the common carotid—recovery. *Trans. American Ophthal. Society*, Vol. X (1903), p. 38.
- (5) **Oliver, Charles A.**—Right pulsating exophthalmos—ligation of both the right common carotid artery and the left internal carotid artery—accidental traumatism—cure. *New York Medical Journal and Philadelphia Medical Journal*, April 9th, 1904.
- (6) **Maynard, F. P.**—Pulsating exophthalmos due to dilatation and dropsy of the optic nerve accompanying internal hydrocephalus. *Trans. Ophthal. Society*, Vol. XXIV (1904), 174.

(1) Ligature of the common carotid artery succeeds in curing about 60% of the cases of pulsating exophthalmos, while death has resulted in about 10% of the remainder. Spontaneous recovery and expectant treatment (quiet, potassium iodide, etc.), results in 7% to 8% of recoveries. Compression of the common carotid gives relief in most cases, and if kept up for an hour or so every day for months is said to have succeeded in a somewhat larger percentage. After these preliminary remarks, **Würdemann** relates the case of a woman, *æt.* 40 years, where an excellent result followed ligature of the external carotid succeeded at once by ligature of the common carotid.

(2) The peculiarity of **Hartridge's** case of pulsating exophthalmos lay in the fact that the sight of the affected eye was normal.

(3) A lad, 15 years of age, was shot behind the right ear, and almost immediately after the accident, the patient developed a pulsating exophthalmos of the corresponding eye. Five to six months later, the right common carotid was tied, but "in general the operation may be said to have been unproductive

of results." Fifteen months after the injury, and nine months after the artery had been ligated, the condition was as bad as before, and the left internal carotid was then tied, after a preparatory course of treatment by Tuffnell diet. The immediate effect of the intervention was not very pronounced, but 21 months afterwards a marked diminution if not an actual cure of all the symptoms followed an accidental collision between the lad and one of his playmates.

(4) A man, 29 years of age, was struck on the top of his head with a bottle full of beer. The next morning he became conscious of a continuous roaring noise on the left side of his head, and on the following day the left eye began to protrude and the eyelids to swell. Within a week both eyes showed distended conjunctival and sub-conjunctival veins. When examined by **Bull** about a month after the injury, there was exophthalmos, more marked on the left side. A few days later a fissure was felt in the frontal bone, extending from the margin of the orbit nearly to the vertex, and this fissure could be traced for some distance backwards along the roof of the orbit. It was evidently the result of a fracture of the skull, which had produced an arterio-venous aneurism posterior to the orbit. A double ligature was placed around the common carotid artery on the left side just above the omo-hyoid muscle. The pulsation, thrill, and bruit in and about the orbit ceased at once, and had not returned when the patient was examined about a year after the operation. The subconjunctival veins of both eyes, however, were still engorged, and there was no apparent change in the frontal fissure mentioned above. The retinal veins in both eyes were engorged, and there were remains of numerous hæmorrhages in the retina of the left eye. The general health of the patient was excellent.

(5) **Oliver** reports the case of a boy, fifteen years old, who had been shot at the back of the right ear five months previous to coming under observation. The bullet was not found. At the time of the first examination, the right eye was found to be proptosed with an external deviation. Upon forcing the organ back into the orbital cavity, a marked thrill could be felt which ceased when pressure was applied to the corresponding carotid artery. Below the right mastoid region there was a scar which marked the point of entrance of the bullet. In this area a thrill could be felt. Excepting a slight increase in the size of the retinal vessels with a marked pulsation of the corresponding veins, the fundi were healthy. X-ray examination failed to show the presence of any foreign material in any part of the skull. The right common carotid artery was ligated, the operation proving

almost wholly unsuccessful. Nine months afterwards, the left internal carotid artery was tied. The symptoms remained, however, about the same for a period of about two months after the procedure, when the exophthalmos gradually became less marked and the bruit was not so audible. Twenty-one months after the second operation the patient collided with one of his playmates. During the evening of that day he observed a marked diminution of the bruit and the exophthalmos, these symptoms permanently disappearing the following morning. Three months after the collision there was no pulsation of the orbit, thrill, or bruit, and the exophthalmos had practically gone. JOHN T. KRALL.

(6) A married but childless Bengali girl, 15 years of age, was admitted to the Calcutta Eye Hospital under **Maynard** with a history of blindness of one year's duration and of proptosis of the right eye for six months. There was also a history of occasional "fits." Upon examination, marked proptosis of the right eye, the visual axis of which was directed down and out. An ill-defined mass, pulsating feebly, could be felt deep in the orbit, lying behind and to the outer side of the displaced eyeball. No bruit. No reflex could be obtained from the right fundus. The left optic disc was atrophied. When the patient was seen eighty-two days later, the right cornea was found to have sloughed. On the next day the eyeball was enucleated, and at the operation the optic nerve was found to pass into the pulsating swelling in the orbit. After the operation there was a copious discharge from the orbit soaking the patient's pillow, and upon chemical examination, this liquid was found to yield the reactions for sugar and to have a specific gravity of 1.003. The patient, who became rapidly weaker, died thirteen days after the eyeball had been removed. The *post-mortem* examination led to interesting revelations. Upon opening the skull, a large amount of cerebro-spinal fluid escaped, and on removing the brain, the right optic nerve was found to be spread out into a sac (filled with clear fluid) and to pass through a greatly distended optic foramen. The dilated portion, which was continuous with the under surface of the brain, measured one by one-half inches. The brain weighed 51 ounces—that is to say, it was large for a woman of the patient's size. The lateral ventricles were markedly distended. The foramen of Munro, leading from the lateral to the third ventricle, was also much dilated, while the cavity of the third ventricle itself was greatly dilated and continuous below with a sac, occupying the place of the chiasma, at the base of the brain, which in its turn

opened into the dilated optic nerves. The iter a tertio ad quantum ventriculum was but slightly enlarged, while the fourth ventricle was normal. The walls of the skull were unusually thin, especially in the temporal fossa. Of the several deformities present at the base of the skull the most striking was a chasm in the position of the optic foramen and orbital fissure through which the dilated right optic nerve passed. Maynard concludes that these deformities of the base of the skull were the result of the dropsy of the optic nerve, and that they must have occurred at a very early age, being probably congenital in nature.

IV.—HYPOPYON KERATITIS.

- (1) **Nerli, G.**—Treatment of hypopyon keratitis and corneal abscess. (Contributo alla terapia della cheratite con infiltramento e dell' ascesso corneale.) *La Clinica Oculistica*, Novembre e Dicembre, 1904.
- (2) **Prof. L. Manché** on the same subject. *La Clinica Oculistica*, Gennaio, 1905.

(1) **Nerli** is strongly in favour of the use of eserine in suppurations of the cornea, with or without hypopyon, following Wecker, Deleno, Simi, Marescotti, and others, in preference to atropine recommended by many authors. Two clinical cases, described in detail, are brought forward to illustrate his arguments.

(2) Professor **Manché**, of Malta, to corroborate Dr. Nerli's experience, published in the ensuing number of the same paper the following note, which originally appeared in the *British Medical Journal* of the 17th January, 1891 :

Sulphate of Eserine in Hypopyon Keratitis.

My object is to invite attention to a simple remedy which I have found very useful in arresting and curing hypopyon keratitis. The disease is due to the deposition of some micro-organism on an abrasion of the cornea in persons of enfeebled constitution. The treatment adopted by the generality of medical practitioners and by a good number of specialists has been, and is still, the application of hot fomentations with decoction of camomile flowers, poppyheads, or belladonna leaves ; of antiseptic lotions, particularly boracic acid, 1 in 50 ; or of corrosive sublimate, 1 in 5,000 ; atropine drops which, if they are useful in lulling the pain, are, however, hurtful in increasing the tension of the eyeball ; and, lastly, insufflations of powdered calomel or of iodoform,

which are supposed to act beneficially in reviving the healing up process of the corneal ulcer. In case these means should fail in arresting the progress of the ulceration and of causing the absorption of the pus, cauterisation of the ulcer with the thermo- or galvano-cautery, or the emptying of the hypopyon by cutting through the cornea is often practised. Though both these procedures are very often successful, they are not devoid of danger, and require a well-trained operator for their performance. Moreover, it is not always easy to get the patient to submit to an operation, and perhaps more than one, requiring the use of the cautery or of the knife. I am convinced, after a trial of about ten years, that a solution of sulphate of eserine (gr. ij per ounce) dropped, two or three times a day, into the affected eye, which has to be kept constantly well bandaged up, while the patient's state of health is improved by means of good nourishing diet and a tonic mixture, say the citrate of iron and quinine with liquor strychninæ, is all that is required to cure almost every case of hypopyon keratitis. In a very few exceptional cases only does it become necessary to perform Saemisch's operation of cutting across the cornea, including the whole ulcerated surface, and thus giving issue to the pus, reducing the intra-ocular tension, and stimulating the edges of the atonic ulcer to heal up. De Wecker, of Paris, was, I believe, the first to recommend this treatment about ten years ago. Having found it very successful in a great many cases, some of which were quite hopeless without operation, I can recommend it very strongly.

V.—COLOUR-BLINDNESS.

Marle, F. G. v.—Practical value of some methods of detecting colour-blindness. (*Prahlische waarde van eenige methoden van onderzoek naar kleuren-blindheid.*)
Thesis for the degree of M.D. Amsterdam, 1904.

In the first chapter of his thesis **van Marle** gives a history of the different theories of colour-blindness, and a record of nine railway and naval disasters, caused by non-recognition of signals by colour-blind men. Well authenticated facts are rather few in literature, especially in the last twenty-five years, since everywhere Daltonists are excluded by laws or regulations from employments in which danger could arise from their defect. For the detection of colour-blindness many methods have been described; some, however, like the spectroscopic examination, although giving information on a great many

points, as the limits of spectrum, the relative positions of the colours in it, their relative brightness, etc., are too complicated for practical use. Their application therefore is restricted to the examination of doubtful cases.

Seven other methods (discussed below) were tested by van Marle as to their practical value. It appeared to be unsafe to examine with one method only, for in this case a few colour-blind will escape notice, and occasionally a normal person may be mistaken for colour-blind.

(1) Stilling's pseudo-isochromatic print proved to be a very rapid and trustworthy test. Of 26 persons examined, 23 were at once recognised to be colour-blind; the three others were suspects, reading the ciphers with some hesitation, and they were found to fail in other methods. Some of the plates are *not* deciphered by normal persons. If a candidate reads Stilling without hesitation, he may be safely admitted; but if he fails, further examination is necessary to justify rejection.

(2) Holmgren's wool test is trustworthy, but it does not detect every Daltonist. Among 25 colour-blind, 18 were at once recognised; six by their hesitation gave rise to suspicion, and had to be subjected to other methods. One patient made no mistake at all, and would certainly have passed unnoticed if tried by the Holmgren wools alone. On the other hand, there is no danger, as there is with Stilling, of rejecting normal persons, for without exception these stand Holmgren well.

(3) Adler's method gives very similar results. From a collection of coloured lead pencils, one is taken and shown to the patient, who is asked to select the ones of similar colour. Afterwards he has to draw lines with the selected pencils on a piece of paper, thereby giving himself a lasting testimonial of colour-blindness if the wrong colours are chosen. (There exists a modification of this method by which the patient is invited to write down the names of the colours with the corresponding pencils, a very striking evidence resulting if "grass-green" should be written with a *red* pencil. This, however is entirely faulty; the patient should not be allowed to *name* the colour.) Among 27 colour-blind 21 were at once detected; two should have escaped notice.

(4) Nagel's lantern test was satisfactory, but only if all the four different proofs were used as follows. First, two different *shades* of red are shown (colour-blind people see different *colours*). Second, red and brownish orange; for colour-blind these can be made identical by varying the amount of light; the same can be done for 3° red and green, and 4° green and yellow. Of 26 cases 20 were detected with certainty; all the others awoke strong suspicion. A

drawback is that "colour-weak" people are not detected, *i.e.*, persons not making decided faults with any method, and yet by their hesitation showing that their colour-perception is not equal to the normal.

(5) The same drawback is inseparable from the Thering apparatus (the older form). For detecting real colour-blindness it gives results equal to the Nagel test.

(6) Dürder's lantern test is only meant for measuring the acuteness of colour-perception by finding the distance at which the colour of a piece of glass placed in a constant opening and illuminated from behind by a constant light, can be recognised. Although very valuable for detecting defective colour-perception, and officially adopted for the examination of candidates for railway service in Holland, it gives no answer to the question—Is there colour-blindness or not?

(7) Not very satisfactory was the result of a trial with the chromatoptometer of Chibret. In this apparatus, by chromatic polarization, two fields of light are shown, to which every shade of every colour can be given, but so that the two fields always show complementary colours. To colour-blind people the two fields can be made identical by giving *the instrument a certain position*. Sometimes, however, when the patient calls the fields "alike," these are so very little coloured that probably he only judges by the intensity of the light, without seeing any colour at all, and only in a minority of cases so strongly related different colours are called alike, as is the case in Thering's instrument, to which Chibret's is distinctly inferior.

Van Marle concludes that the following is the best way to examine a great many patients in a short time: first, Stilling's pseudo-isochromatic test should be applied. This will show in a few minutes all the colour-blind, colour-weak, or suspect persons. If Stilling is read without hesitation, the candidate can be safely passed. The persons who do not read Stilling readily should be tried with Nagel's lantern. Some of the suspected ones will then prove to be colour-blind. If Nagel is negative, one should apply Holmgren or Adler, in order to make sure whether colour-blindness or only colour-weakness is present.

G. F. ROCHAT.

VI.—HERPES ZOSTER.

- (1) Hall, Arthur.—Herpes of left upper division of the 5th nerve, with ocular paralysis. Paralysis of the right 3rd nerve, iritis, and diabetes. *British Journal of Dermatology*, September, 1903.

- (2) **Ahlström, Gustaf.**—Some complications of herpes zoster ophthalmicus. *Hygiea*, Augusti, 1904.
- (3) **Strzeminski.**—Rare complication of zona ophthalmica. (Complication rare du zona ophtalmique.) *Recueil d'ophtalmologie*, décembre, 1904, and janvier, 1905.
- (4) **Marquez.**—A rare form of corneal affection. (Un caso raro de afeccion corneal.) *Archivos de Oftalmologia Hispano-Americanos*, Julio, 1905.

(1) This remarkable case occurred in a man, aged 66 years, who when seen gave a history of one week's duration. There was paralysis of the left 3rd and 4th nerves, congestion of the conjunctiva, corneal nebulæ, ptosis, dilatation of the pupil, and the eye turned outwards; there were also spots on the left frontal region. Pain then developed in the right eyeball, and paralysis of the right 3rd nerve came on with iritis; this, however, soon got better. **Hall** remarks that he is unaware of any other case in which herpes with paralysis of one side has been followed by paralysis without herpes on the other side. This patient had diabetes, and this may have had much to do with it.

C. D. M.

(2) In two cases which **Ahlström** observed, it was an eruption of herpetic vesicles on the cornea, but the accompanying affection of the skin followed, the frontal branches of the ophthalmic nerve and the region of the nasal branch was quite unaffected. In another case the herpes corneæ was complicated with a papillitis, which ended in atrophy. According to the author, this case is best explained by the presumption that herpes zoster is due to an infection. As a support of this opinion, he reports a case with a herpetic inflammation of the left cornea without any affection of the region of the periocular nerves, but with a herpes zoster on that of the left lumbar plexus. **J. WIDMARK.**

(3) **Strzeminski's** patient—a man, aged 47 years—after premonitory fever and shivering, developed a right-sided herpes frontalis, involving the side of the nose, with intense pain in the right side of the head, conjunctival hyperæmia, photophobia, and lacrymation. Three days after the appearance of the cutaneous eruption a typical interstitial keratitis appeared in the right eye. The cornea was completely anæsthetic, tension *minus*, and vision reduced to '01. The iris was normal, and field of vision full. There was no history of hereditary or acquired syphilis and the general health was good. Under treatment by atropine and hot compresses, the corneal opacity quickly diminished from periphery to centre, and in two months the

symptoms, had all disappeared and the vision become normal. In two other cases of zona ophthalmica the author has noted ocular complications. In one there was conjunctival vesicles and excoriations and small ulcerations of the anæsthetic cornea on the side affected. The second case developed atrophy of the right optic nerve three weeks after the disappearance of a right - sided herpes frontalis. The atrophy was limited to the temporal half of the disc, and although the field remained concentrically contracted to 10° or 15° , the visual acuity did not fall below 6/8.

The author draws a distinction between true zona and the "zosteroid" eruptions which occur in the course of certain cases of nervous disease, traumatism, and intoxication. True zona he defines as an acute infectious disease of sharp duration, which attacks the nervous system, and reveals itself by a characteristic cutaneous eruption in the course of a nerve at one side of the body. Its infectious nature is shown by the fact that it occurs in small epidemics, especially in spring-time and at the beginning of summer, and by the existence of a leucocytosis, showing a marked increase of the polynuclear neutrophiles or of eosinophiles. The pathological lesion is regarded as an acute posterior poliomyelitis, the Gasserian ganglion being the representative of the spinal ganglion in the posterior nerve roots. The analogy with eruptive fevers is further borne out by the fact that one attack of zona confers immunity on the patient attacked. The eruptive stage is preceded by prodromata in the form of general malaise, digestive disturbances, headache, and feverishness, which generally abate when the eruption appears. The eruption is associated with painful enlargement of the neighbouring lymphatic glands—the preauricular in the case of zona ophthalmica.

The area of the eruption, although anæsthetic during the eruptive stage, is often the seat of neuralgia afterwards. More rarely, muscular paralysis, generally confined to the region affected by the eruption, and tenderness of the nerves in the neighbouring areas, may result.

Ocular complications occur in one-half to two-thirds of the cases of zona ophthalmica, and are more frequent when the eruption has extended to the side of the nose along the course of the nasal nerve. The ocular symptoms may be confined to the conjunctiva, which may simply be hyperæmic, or there may be œdema of the lid and a mucopurulent conjunctivitis and chemosis with vesicles like those of phlyctenular conjunctivitis. There may be scleral injection with episcleritis. Of more serious import are lesions of the cornea and iris. Vesiculation followed by anæsthesia and small ulceration are often noticed about the

sixth or seventh day after appearance of the eruption on the skin. These are associated with much periorbital pain and lacrymation, and are liable to frequent relapses. There is also frequently a diminution in the tension and humidity of the eye. More rarely an interstitial keratitis, without vesiculation and without any epithelial lesion, has been observed.

This form is also associated with corneal anæsthesia and diminished tension. In some cases a form of acute serous iritis, with small plastic exudations into the tissue of the iris, has been noted. This has been regarded by Machell as a true herpes of the iris.

Cyclitis, cataract with ophthalmoplegia, small scleral bosselations, glaucoma, optic neuritis and atrophy, oculomotor paralysis, thrombosis of the ophthalmic veins and panophthalmitis are among the complications of zona ophthalmica which have been recorded.

J. JAMESON EVANS.

(4) **Marquez** observed in a patient, who had recently suffered from zona ophthalmica, a bulging of the central corneal region, without loss of the superficial layers; later, there appeared a nebula in the deeper layers at this point. He thinks that the lesion was probably a papule which ruptured through the posterior layers, and thus the anterior layers, insufficiently supported, gave way and allowed the localised ectasia. The patient eventually recovered with a flat cicatrix in the centre of his cornea.

HAROLD GRIMSDALE.

VII.—INJURIES OF THE OPTIC NERVE

- (1) **Gagarin.**—A case of *evulsio nervi optici utriusque*. (Ein Fall von *Evulsio nervi optici utriusque*.) *Klin. Monatsbl. f. Augenl.*, 1904, II, p. 258.
- (2) **Duyse, Van.**—Retro-ocular wound of the optic nerve. (*Ferita retrobulbare del nervo optico da pallino di piombo penetrato di faccia nell'orbita.*) *Revista Italiana di Ottalmologia*, Marzo, 1905.
- (3) **Sharp, Walter N.**—A case of probable rupture of the optic nerve. *Archives of Ophthalmology*, March, 1905.
- (4) **Evans, J. Jameson.**—Indirect injuries of the optic nerve. *British Medical Journal*, July 8th, 1905.
- (5) **Sachsaler, A.**—Bullet wound of both optic nerves; recovery of slight peripheral vision after long-standing blindness. (*Schussverletzung beider Sehnerven mit langdauern der Amaurose und schliesslich geringem peripheren Sehen.*) *Zeitschrift für Augenheilkunde*, Ergänzungsheft, 1905.

(1) **Gagarin** gives the details of an interesting case of divulsion of the optic nerve with ophthalmological appearances. A man of 38 years had received a blow from a horse-shoe on the maxillary bone. There was amaurosis of both eyes, and in the place of the optic nerves was a definitely outlined hole.

A. BIRCH-HIRSCHFELD.

(2) The chief interest in **Van Duyse's** case is that the consecutive atrophy was visible with the ophthalmoscope four days after the wound.

HAROLD GRIMSDALE.

(3) A fifty-five year old man fell on the small end of an umbrella, which struck him in the inner canthus of the left eye. When first seen by **Sharp**, three hours and a-half after the accident, the eyelids were so œdematous, ecchymosed, and tense that they could not be separated, except so far as to determine that vision was destroyed. Blood flowed from a supposed conjunctival wound and from the left nostril. Two days later, a further examination revealed a laceration in the conjunctiva, situated about two millimetres above and to the inner side of the upper lacrymal punctum. A No. 6 lacrymal probe passed freely in the direction of the upper and the inner portion of the globe. The next day, an ophthalmoscopic examination gave the following results: retinal veins distended; corresponding arteries nearly empty; optic nerve head and surrounding retina œdematous; media somewhat hazy; and the macula indistinct. No hæmorrhagic spots were visible. The eyeball was displaced downwards about three millimetres, and its upward and inward movements were impaired. From the sudden loss of vision and the absence of orbital wall fracture or sinus involvement, a diagnosis of probable rupture of the optic nerve was made.

JOSEPHINE W. HILDRUP.

(4) **Evans** reports five cases in which a more or less severe blow on the external angular process of the frontal bone was followed by sudden impairment of sight affecting the eye corresponding to the injury. Additional symptoms were loss of the greater part of the temporal part of the field of vision on the same side, and, in the course of a few weeks, atrophy of the optic papilla. After enumerating the possible causes of these symptoms, Evans concludes they are produced by contusion of the nasal fibres of the optic nerve by *contre-coup*. The opposite side of the nerve is shielded by the ophthalmic artery, which winds round its outer side from below. These cases should be treated on the same lines as those adopted for concussion of the brain, namely, by rest, quiet, a darkened room, and aperients for a week or two. Work and mental excitement should be avoided for a further period of two or three weeks.

S. S.

(5) **Sachs**salber recounts a curious case of attempted suicide in which the patient shot himself in the right temple, the bullet being found under the skin immediately above the zygomatic arch on the left side. The course was quite typical: protrusion of eyeballs, orbits full of blood, dilated fixed pupils, absolute amaurosis. Patient gradually recovered. Fundus, at first normal, began to show evidences of optic nerve atrophy, and this progressed on both sides until both discs were dead-white. Three months after the injury the patient noticed flashes of light. Careful examination showed that in the left eye up and in from the point of fixation at about 35° from it the light of a candle could be recognized, and hand movements seen at $\frac{1}{2}$ metre. The sensitive area was very small, and has remained so, but under strychnine treatment it is not so easily exhausted and now, $1\frac{1}{2}$ years after, the patient can count fingers at 35 cm., and can make out some colours. The fibres must have been, injured very slightly to enable them to resume their function after so long an interval.

A. LEVY.

VIII.—CORNEAL INJURIES.

- (1) **Roques** (Cannes)—Wounds of the cornea. (Sur les traumatismes de la Cornée.) *La Clinique Ophthalmologique*, 10 avril, 1903.
- (2) **Mitchell, S.**—Incised wound of the cornea made by a fragment of spectacle lens. *Ophthalmic Record*, June, 1903.
- (3) **Bietti, A.**—Clinical contribution to the study of Fuch's "keratitis disciformis" and traumatic parenchymatous keratitis. (Contributo clinico allo studio della cheratite disciforme de Fuchs ed alla questione di una cheratite parenchimatosa traumatica.) *Archivio di Ottalmologia*, Vol. XI, Fasc. 5-6, November-December, 1903.
- (4) **Ulbrich, Hermann.**—An unusual injury to the cornea (corneal splitting). (Eine seltene Hornhautverletzung (Hornhautspaltung).) *Klin. Monatsbl. f. Augenheilkunde*, März, 1904.
- (5) **Wagenmann.**—Relapsing erosion of the cornea. (Rezidivierende Hornhauterosion.) *Münch. mediz. Woch.*, 1905, 2, and *Wochens. f. Therapie u. Hygiene des Auges*, 16 Februar, 1905.

(1) **Roques** states that in two cases of corneal ulcer, due to foreign bodies, ordinary local treatment was prolonged and unsatisfactory. He administered two grammes of aspirine daily, and the patients got well, the first in two, and the second in four, days.

ERNEST THOMSON.

(2) Whilst chopping wood, a splinter broke the spectacle lens of a woman, aged about 30 years. The broken glass produced an incised wound, 7mm. or 8mm. long, of one cornea. The anterior chamber did not re-form, and twenty-four days after the accident the patient developed acute glaucoma of the wounded eye. This was relieved by iridectomy.

(3) Of the three cases observed by **Bietti**, the second exactly reproduced Fuch's description of "keratitis disciformis," whilst the first and third represented atypical forms approximating to the cases published by Grünert and Pfister of "Annular Keratitis." It is proven in a certain number of cases, and in others it is probable, that these keratites follow traumatism, sometimes very slight and inappreciable, and attenuated infectious processes. Vossius and his pupils have also attributed a traumatic origin to a few cases of parenchymatous infiltration followed by vascularisation (hybrid forms of interstitial keratitis, sometimes analogous to disciform or annular keratitis). In conclusion, traumatism may occasionally induce keratitis interstitialis in cachetic subjects.* This question has also a certain importance from a medico-legal point of view.

A. ANTONELLI.

(4) **Ulbrich** observed the following case in a girl, 23 years of age, who had fallen and struck one eye against a blunt knife. There was a lacerated wound of the lower lid, and a wound of the ocular conjunctiva below the cornea. Moreover (and this is the point of the case), the upper third of the cornea was deprived of its epithelium, while along the limbus of the lower half of the cornea was an arcuate wound, resembling a downward section for the removal of cataract. The cornea was divided into two layers, superficial and deep, without the anterior chamber being opened. The corneal wound healed perfectly, with vision equal to 6/20.

J. F. S.

(5) **Wagenmann**, of Jena, discusses the class of cases known as *erosio corneæ*—that is to say, attacks of relapsing inflammation following some more or less trivial injury to the anterior epithelium of the cornea. His numerous personal observations lead the author to believe that the crux of the affection is to be found in an imperfect regeneration of the epithelium after the original injury. Formation of bullæ, sometimes observed, he regards as secondary. As regards prevention, careful treatment of the original wound with antiseptic ointments and a bandage is all-important. In slight cases boric vaseline or sublimate salve should be put into the eye last thing

* See communication by H. Work Dodd on "Interstitial Keratitis and its relation to injury," *THE OPHTHALMOSCOPE*, May, 1904, p. 176.

at night for several weeks, and particular care should be taken to open the eyes cautiously in the morning. In relapsing cases a permanent cure is generally obtained by ointments and bandaging. In severe cases only are such severe measures as scraping away the diseased epithelium and touching the affected spot with disinfecting liquids called for. Wagenmann describes a couple of typical relapsing cases of erosion in men, aged 40 and 45 years respectively.

MAX P.

IX.—TREATMENT.

(Fifth Notice.)

- (1) Morier, R.—The influence on eye diseases of the climate of the Maritime Alps. (Influence du climat des Alpes-Maritimes sur les maladies des yeux.) *La Clinique Ophthalmologique*, 25 mai, 1904.
- (2) Terson, Albert.—Therapeutic and clinical notes. (Notes therapeutiques et cliniques.) *La Clinique Ophthalmologique*, 10 juin, 1904.
- (3) Baro.—The treatment of glaucoma. *Arch. de Optal. Hisp.-Americ.*, Junio, 1904.
- (4) Painblan and Taconnet.—Methylene blue in the treatment of variolous ophthalmia. (Le bleu de méthylène dans le traitement de l'ophtalmie variolique.) *Echo méd. du Nord*, 1904, p. 260.
- (5) Grandclément.—How is adrenaline to be employed in the cure of glaucoma without operation? (Comment faut-il employer l'adrénaline pour guérir le glaucome sans opération?) *La Clinique Ophthalmologique*, 25 juin, 1904, and *Bull. et Mém. de la Soc. française d'Ophtal.*, 1904, p. 309.
- (6) Ahlström, G.—Sympathetic ophthalmitis completely cured during an intercurrent febrile attack. (Sympathische Ophthalmie während einer intercurrenten Fieberkrankheit vollkommen geheilt.) *Centralbl. f. prak. Augenheilkunde*, Juli, 1904.
- (7) Gairdner, W. T.—A very simple contrivance to aid myopic and other failing eyes, especially in reading. *Lancet*, 1st October, 1904.
- (8) Nerli.—On the treatment of keratitis with infiltration and abscess of the cornea. (Contributo alla terapia della cheratite con infiltramento e dell' ascesso corneale.) *La Clinica Oculistica*, Nov.-Dec., 1904.

- (9) **Stanculeano.**—Diagnostic and therapeutic researches in parenchymatous keratitis with tuberculin T. (*Recherches diagnostiques et thérapeutiques dans la k ratite parenchymateuse au moyen de la tuberculine T.*) *Ann. d'Oculistique*, T. CXXXII, p. 340, novembre, 1904.
- (9A) **Polte.**—Paranephrin: a new preparation of suprarenal capsule. (Paranephrin: ein neues Nebennierenpr parat.) *Archiv f r Augenheilkunde*, November, 1904.
- (10) **Stanculeano.**—Tuberculin, T. in the diagnosis and treatment of parenchymatous keratitis. (Investigaciones diagnosticas y terapeuticas en la queratitis parenquimatosa por medio de la tuberculina T.) *Archivos de Oftalmologia Hispano-Americanos*, Noviembre, 1904.
- (11) **Foisy, J.**—Stovaine, a local an sthetic. (La Stovaine, anesth sique local.) *Tribune m dicale*, 10 septembre, 1904, and *Recueil d'ophtalmologie*, novembre, 1904, p. 697.
- (12) **Stephenson, Sydney.**—A note upon some substitutes for silver nitrate in eye work, with particular reference to argyrol. *Medical Press and Circular*, 21st December, 1904.
- (13) **Hedd us.**—Prophylactic inunction in wounds of the eye. (Die prophylaktische Schmierkur bei Augenverletzungen.) *Woch. f. Ther. u. Hygiene des Auges*, 22 Dezember, 1904.
- (14) **Krauss, W.**—On intraocular disinfection, with special reference to iodoform. (Zur intraokularen Desinfektion mit besonderer Ber cksichtigung des Iodoforms.) *Zeitschrift f r Augenheilkunde, Erg nzungsheft*, 1904.
- (15) **Abadie, Ch.**—Clinical and therapeutical considerations upon choroido-retinitis. (Consid rations cliniques et th rapeutiques sur les chorio-r tinites.) *Bull. et M m. de la Soc. fran aise d'Ophthal.*, 1904, p. 226.
- (16) **Trousseau, A.**—Hyposulphite of sodium in ocular therapeutics. (L'hyposulfite de soude en th rapeutique oculaire.) *Journ. de M d. et de Chir. prat.*, 10 janvier, 1905.
- (17) **Ginestous, E.**—Treatment of phlyctenular ophthalmia by means of yeast. (Traitement de l'ophtalmie phlyct nulaire par la levure de bi re.) *Gaz. Hebdom. des Sciences M d. de Bordeaux*, 15 janvier, 1905.
- (18) **Bock, Emil.**—The treatment of trachoma by cupro-citrol. (Die Behandlung des Trachoms mit Cupro-citrol.) *Aerztliche Zentral-Zeitung*, 17 Dezember, 1904, and *Woch. f. Ther. u. Hygiene des Auges*, 9 Februar, 1905.

(1) **Morier** gives statistics and experiences to prove that residence at the sea-side is not harmful in most eye diseases, and is beneficial in many.

ERNEST THOMSON.

(3) **Baro** says that he can treat efficiently almost all cases of glaucoma, acute and chronic alike, by means of anti-rheumatic remedies, massage, and myotics. Baro has something of a horror of operating on these cases. He says that only 30 % of those operated on regain useful vision. He therefore attempts to do away with the necessity by reducing the tension twice a day by vibratile massage, and when it is lowered, instils eserine, which then is more easily absorbed by the eye.

HAROLD GRIMSDALE.

(4) During an epidemic of smallpox **Painblan** and **Taconnet** met with forty-eight eye lesions amongst 935 patients. In addition to the ordinary treatment, they used several times a day methylene blue, at first in a 1:500 and later in a 1:300 solution. They claim that this treatment prevents corneal complications in conjunctivitis, and that corneal infiltrations, when present, quickly heal. Furthermore, it is an excellent remedy in purulent ophthalmia.

(5) In this somewhat enthusiastic and optimistic article, **Grand-clément** describes how he waited patiently for a suitable case of recent glaucoma, the subject of which would refuse operation, in order that he might try the effect of adrenaline, or rather of adrenaline and eserine, which, on theoretical grounds, he had concluded would cure the disease. A woman of 37 years with sub-acute glaucoma of two days' duration had "mydriasis, enormous increase of tension, terrible pain, no vision." Eserine alone had no effect. For three consecutive days, every half-hour day and night, a solution was instilled which contained "adrenaline (1 in 1000) 3 grammes, and 5 centigrammes of eserine in 10 grammes of water." Amelioration began at end of second hour. On the third day she had recovered one-half of her visual acuity, and the hypertension had changed over to hypotension. After a week the eye appeared definitely cured, and sight was $\frac{3}{4}$ normal.

ERNEST THOMSON.

(6) **Ahlström** relates the case of a man, age 25 years, who was injured by a boiler explosion, and, among other things, lost the sight of his right eye. As soon as possible he was conveyed to a hospital, where he recovered almost completely from his other injuries. The damaged eye, however, remained inflamed and began to shrink. There was no pain or tenderness. Three months after the accident, the left eye began to be painful, inflamed, and photophobic. The right eye was thereupon removed, and in it was found a sharp piece of glass which came from a

shattered manometer tube. In spite of this, however, the left eye became progressively worse, and vision sank to perception of light; whereupon the patient was informed of the bad prognosis. On the following day patient was found to be suffering from an acute febrile attack, with rigors, which he said was an attack of a fever which he had acquired in the Congo, and from which under quinine, he had recovered in three or four days.

Simultaneously with the disappearance of this fever there came a marked improvement in the condition of the eye. The injection diminished, the cornea became clearer, the iris dilated under atropine, vision gradually increased until, at the end of a week, he could count fingers at 5 m. The condition then remained stationary until, three weeks later, he had a fresh attack of the fever and again there was a further improvement of the eye and the fundus began to clear up. After another four weeks patient had a further similar febrile attack, after which the condition of the eye still further improved, so that when he was discharged, all that remained of the disease was one broad posterior synechia, a few vitreous opacities, and V. = 6/18. In the course of the following year V. improved to 6/9 and now, nine years later, the eye is quite healthy and vision good. A. LEVY.

(7) **Gairdner** employs a home-made contrivance to help his sight. It consists of a conical tube of pasteboard, 2½ inches in length, kept in front of the eye by a bit of elastic. It is blackened within. It acts by shutting off side rays, and limiting the area of the vision with corresponding distinctness in detail.

(8) **Nerli** has found that he has better results in these cases when he discards atropine (except in the presence of marked iritis) and instills eserine freely; his usual method is to order a solution of eserine (grs. ij ad oz. j), to be instilled twice a day, and, in addition, to use freely a weak solution of silver nitrate.

HAROLD GRIMSDALE.

(9) With a view to elucidating the etiology of parenchymatous keratitis, **Stanculeano** gave injections of Koch's original tuberculin T. to eight patients suffering from the disease. All the patients appeared free from tuberculosis; their age varied from seven to twenty-four years. One of them had a single injection of 1 mgr., and did not react. The others received increasing doses, and, with the exception of a child, aged ten years, all reacted to injections of less than 1 centigramme, as evidenced by a temperature of 38° C. or upwards, and by general symptoms. Improvement in the ocular condition occurred in two cases, in one of which it was preceded by increased inflammation. The results of these experiments, combined with

the statistics of Frank, who found that 61 per cent. of the Bavarian recruits passed as sound reacted to tuberculin T., lead Stanculeano to doubt the diagnostic value of the preparation.

In a similar series of experiments, Enslin ⁽¹⁾ found that nine out of eleven patients without signs of tuberculosis did not react to injections of tuberculin T., and the difference is probably due to the fact that he used smaller doses (5 mgr. and under).

R. J. COULTER.

(9A) **Polte** describes his experiments on man and animals with paranephrin, a new product of the Darmstadt firm of Merck and Co., containing 1 part of paranephrin dissolved in 1,000 parts of an 0.6% solution of common salt. The solution is stable, but small, black flakes separate out from it after it has been kept for some time in a drop-bottle, although without diminishing its physiological activity. Its action, of course, is that of active suprarenal extracts in general, and hence need not be described more particularly. It may, nevertheless, be noted that after the intravenous injection of paranephrin in rabbits there was blanching of the mucous membrane of the mouth and conjunctiva and dilatation of the pupil. When the liquid was injected into the anterior chamber, a wide dilatation of the pupil resulted, and when it was injected into the vitreous body, contraction of the retinal and choroidal vessels was observed. Dilatation of the pupil and narrowing of the choroidal vessels also followed the subconjunctival injection of paranephrin.

S. S.

(10) The question of the origin of interstitial keratitis, which once seemed settled by the works of Jonathan Hutchinson, has been re-opened recently. von Hippel states that from 30 % to 50 % of all cases are not due to hereditary syphilis. **Stanculeano** has tried to decide the question by the use of tuberculine injections. Eight patients suffering from interstitial keratitis were examined, all of whom appeared free from tubercle. Of these, one received one injection only of 1 milligram and showed no reaction, the others all received increasing doses, and with one exception, reacted before the dose had risen to a centigram. In five cases it was not possible to observe any local reaction, owing to the condition of the eye before the injection. In one case the injections seemed to have a beneficial effect on the disease. The diagnostic value of the injections is, however, very doubtful, and does not, when all is said and done, help to elucidate the relationship between tuberculosis and interstitial keratitis.

HAROLD GRIMSDALE.

⁽¹⁾ *Deutsche Med. Woch.*, 19 Februar, 1903. For abstract, see *THE OPHTHALMOSCOPE*, Vol. I, 1903.

(11) The marvellous results produced by the admixture of adrenaline and cocaine are well-known. It would be interesting to know whether stovaine, the new local anæsthetic is able to offer the same advantages when mixed with adrenaline. **Foisy** has studied this point. In the course of the numerous experiments he has made on guinea-pigs, he has found grave troubles, local and general, produced by the injection of the two substances. In guinea-pigs the mixture gives rise to (1) marked local vaso-constriction; (2) reduction as regards the toxicity of stovaine; (3) production of a slough at the point of injection. **Foisy**, therefore, concludes that the injection of the stovaine-adrenaline solution as an injection is contra-indicated in man. On the other hand, the cocaine-adrenaline mixture presents these advantages: (1) perfect anæsthesia of tissues, healthy and inflamed; (2) feeble toxicity; (3) arterial hypertension and tonic influence upon the heart; and (4) local vaso-constriction. **A. BEAUVOIS.**

(12) **Stephenson**, after discussing the advantages and disadvantages of largin, protargol, and argyrol respectively, concludes his article with these words: "Silver nitrate, although invaluable in the hands of those who know how to use the remedy, is apt to become a somewhat dangerous weapon if employed without due experience, skill, and discrimination. The knowledge of this fact has led chemists to endeavour to find an agent that shall possess the antiseptic powers of silver nitrate without its undesirable qualities. It has been recognised that the clinical value of a silver compound depends upon the amount of the contained silver, and that is modified, often in an undesirable direction, by the other chemical constituents of the salt. Hence, the last few years have witnessed the production of many new silver compounds belonging to the organic class. The ideal agent must fulfil the several requirements of not coagulating albumen or of precipitating sodium chloride, of ready solubility in water, of not producing pain or of setting up irritation when applied to the eye. Largin, protargol, and argyrol fall more or less in line with these requirements. The staining propensities of largin, and especially of protargol, make me give the preference to argyrol as an agent for general employment. So far as my personal experience goes, it never does the least harm, while it is, without doubt, an efficient, speedy, and painless remedy in most superficial affections of the eye."

(13) **Heddeus** has an argumentative article upon the limitations of Schirmer's treatment of perforating wounds of the eye by means of massive inunctions of mercurial ointment.

(15) **Abadie** begins his communication by insisting upon the

greater frequency of choroido-retinitis nowadays than formerly. All the forms are of microbic origin, and Abadie explains their latter-day prevalence by assuming that the powers of resistance of the organism have become lowered by the more or less artificial conditions surrounding modern life. Syphilis, ancestral or acquired, is the greatest single cause. Functional troubles in these cases are far from being correlated with the lesions as revealed by the ophthalmoscope. It thus comes about that forms of choroido-retinitis associated with seemingly trivial ophthalmoscopic changes are often those which give rise to the most serious defect of sight, and *vice versa*. From the point of view of treatment, choroiditic atrophy of the optic nerve offers a very much better prognosis than atrophy due to extrinsic causes. It is therefore of practical importance to differentiate between the two varieties. In this connection Abadie alludes to a point of distinction which he believes has not yet been described, namely, that in choroiditic atrophy, the optic disc is surrounded by a smaller or larger stripe, with more or less pronounced pigmentary changes, recalling the earlier stages of a posterior staphyloma. Unlike the latter, however, its margins are ill-defined, and it is not localised to the nasal side of the papilla. Abadie then passes forward to consider those cases of choroido-retinitis that bear a close resemblance to retinitis pigmentosa. Mercurial injections, in Abadie's opinion, furnish the first and last word in the treatment of choroido-retinitis, whatever be its origin. They are infinitely superior to any other mode of introducing mercury into the system. He recommends the following solution, of which he begins by injecting into the buttock a minimum dose of 0.02 centigrammes every other day, or, if the eye mischief is of a threatening nature, he injects the same quantity every day:—Mercury biniodide, 1 gramme; potassium iodide, 2 grammes; physiological solution of serum (7 per 1,000 of NaCl), 50 grammes. Intravenous injections sometimes succeed when intramuscular injections have failed. Here, again, large doses are advantageous. Potassium iodide, so often prescribed in these cases, has always appeared to Abadie to be calculated to do more harm than good. S. S.

(16) For long, disinfectant powers have been attributed to sodium hyposulphite, and this is probably due to the fact that most of the hyposulphites of commerce contain a little free sulphurous acid. Although the product is not exactly a bactericide as tested in the laboratory, yet there can be no doubt that it enjoys certain antiseptic properties. Curiously enough, its powers of disinfection bear no relationship to the strength of the solution. Used as a 5% solution, **Trousseau** finds hyposulphite useful in clinical ophthalmology. It may be employed in

several ways, as, for example, as a collyrium, as an irrigation, as a compress; or, lastly, as an injection for the lacrymal passages. The product is cheap, never irritates the eye, and possesses no toxic powers. In keratitis associated with secretion from the conjunctiva, warm compresses of hyposulphite, applied for twenty to thirty minutes four or five times a day, yield excellent results. The solution, used warm, is of service in disinfecting the edges of the eyelids and in dissolving crusts in obstinate cases of blepharitis. It has also been found useful in dacryocystitis, conjunctivitis (acute and chronic), trachoma, and, finally, as a wash for the orbit after the eye has been removed. A. DARIER.

(17) **GINESTOUS** has successfully treated twenty-five patients suffering from phlyctenular ophthalmia with yeast, a substance often credited with having a specific action upon affections due to staphylococci, such as boils. To adults four grammes of yeast were administered daily, and to children half that quantity. Local treatment, however, was also carried out. H. de V.

(18) **BOCK** re-affirms his belief in cuprocitrol as a remedy for trachoma. In fresh cases of the disease its action resembles that of silver nitrate or copper sulphate. In advanced cases, however, it acts even better. The medicament causes neither irritation nor pain, and leads to cure of the disease without the production of cicatrices. It may be employed without disturbing the usual occupation of the patient, who can apply the remedy himself.

MAX P.

X.—PHLEGMONOUS ANGINA (TONSILLITIS).

- (1) **VINCENT**.—Unilateral contraction of the Pupil in phlegmonous Angina. (*Le rétrécissement unilatéral de la pupille dans l'angine phlegmoneuse.*) *Gazette des Hôpitaux*, No. 59, 1904.
- (2) **DOPTER**.—*Ibidem.* *Gazette des Hôpitaux*, No. 61, 1904.

(1) **VINCENT** has found unilateral contraction of the pupil to be present in 27.7% amongst eighteen cases of phlegmonous angina. The contraction was present on the same side as the periamygdalitis, and apparently resulted from a reflex excitation of the oculo-motor nerve. The contracted pupil acted slightly to light and to accommodation.

(2) **DOPTER** confirms Vincent's investigations, and reports three instances where unilateral contraction of the pupil was associated with angina.

XI.—MISCELLANEOUS.

Aubrie, J. B.—The mercurial treatment of *Tabes Dorsalis*.
(*Le traitement mercuriel du tabès.*) *Thèse de Paris*,
mai, 1903.

Aubrie treated nine tabetic patients by mercurial inunctions, with the result that in every case the "lightning pains" became much less pronounced, and in one instance disappeared altogether. The improvement, however, was temporary. After a certain lapse of time, therefore, a fresh course of treatment became necessary. It is to be noted that the inunctions relieved not only the pains but also diminished the gastric crises and the cutaneous hyperæsthesia. The other symptoms manifested little improvement, except in one case where vesical and genital disturbances disappeared.

Sixty patients were then treated by the injection of mercurial salts (soluble and insoluble), alone or associated with inunctions, a method that succeeded in no less than 50 of the patients. The "lightning pains" were most influenced. That symptom was present in 47 of the patients: it disappeared in 14, and amongst all the rest, 33 in number, became much less marked and frequent. Next to the "lightning pains," the motor disturbances of tabes were most benefited by the mercurial treatment. In some cases, notably in that of a dancing master, the improvement in walking was most pronounced. Disturbances of micturition and of erection disappeared or became much less marked under treatment. Ocular paralysis also recovered. Optic neuritis was more refractory, but in one case the vision recovered under mercurial treatment. Two cases of tabetic arthropathy were sensibly improved. The muscular sense, absent from one patient, reappeared. In brief, all the symptoms of tabes improved under this form of mercurial treatment, excepting only the objective signs and the reflex disturbances of the disorder.

A. DARIER.

Juliusberg, F.—Gummata at the point of injection of
Mercurial preparations. *Münchener Medicinische*
Wochenschrift, April 14, 1903.

Juliusberg reports three cases of syphilis in which the treatment consisted of hypodermic injections of mercury; respectively 18 months, 9 months, and several years afterwards there appeared at the points of injection a hard mass of considerable size, painful, and tender. In two cases, the centre of the mass had softened and broken down. He discusses the

question whether the masses were gummas or softened chronic infiltrations produced by encapsulated mercurial salts. As no iodides had been given to the patients, it could not have been a question of the formation of the caustic iodide of mercury within the tissues. Juliusberg reached the conclusion that they were gummata produced by constant traumatism to the parts. They disappeared promptly when iodides were given. He closes his article by giving general directions how to employ the hypodermic method so as not to produce infections.

American Medicine, August 29th, 1903.

Campbell, Don M.—Episcleritis. *Ophthalmic Record*, November, 1903.

Hale, Albert B.—Confessions of a Traveller. *Ophthalmic Record*, March and April, 1903.

Lewis, Eugene Lewis—A modification of the Perimeter, with electric transillumination of the Mires. *Ophthalmic Record*, March, 1903.

Todd, Frank C.—Improved tendon Tucker. *Ophthalmic Record*, March, 1903.

Hoyle, James C.—Ophthalmia Neonatorum. *British Medical Journal*, September 12th, 1903.

Mayou, M. S.—Two drawings of Normal Fundi illuminated by means of a mercury vapour lamp. *Trans. Ophthalmological Society*, Vol. XXIII, 1903.

Two coloured pictures representing the fundus of a girl and of an albino rabbit respectively, as seen by means of a mercury vapour lamp (see THE OPHTHALMOSCOPE, September, 1903, p. 113).

Hirsch, G.—A persistent vessel in the vitreous body. (Ein persistirendes Glaskörpergefäß.) *Archiv f. Augenheilkunde*, September, 1904.

Hirsch reports a case, observed in a man 59 years of age, of a cord, about as thick as one of the chief veins of the retina, passing from the edge of the optic disc to the posterior capsule of the lens. The filament was loose, so that it underwent continual movements "not unlike an eel in water." S. S.

Bullard, William Lewis.—A tumour of the dura mater covered by the cerebellum, located in the posterior fossa of the skull. Some of the symptoms resulting therefrom. *Ophthalmic Record*, April, 1903.

Uhthoff, W.—On the question of choked disc. (*Zur Frage der Stauungspapille.*) *Neurologisches Centralblatt*, No. 20, 1904.

The following are the most striking points in Professor **Uhthoff's** remarks on the pathology of "choked disc." 51 cases were examined anatomically; of these, 32 showed distention of the intervaginal lymph-space, whereas œdema of the optic nerve was present in 30 cases. Out of 204 cases which were observed clinically, 134 were caused by brain tumour, 27 by lues cerebri, 9 by tubercle, and 7 by abscess of the brain and hydrocephalus respectively. The remaining cases were accounted for by a variety of diseases, such as meningitis, cysticercus cerebri, sinus-thrombosis, deformity of the skull, nephritis, lead poisoning, anæmia. The preponderance of new-growths of the brain among the causes of choked disc becomes still more pronounced in view of the fact that in most of the luetic and tuberculous cases, the underlying lesion is really a new formation, gumma and solitary tubercle. Uhthoff is inclined, in dealing with the theory of papillitis, to attach importance, not only to the mechanical moment of increased intracranial pressure, but also to the presence of œdema in the trunk of the optic nerve.

C. MARKUS.

Jessop, Walter H.—Tumour in region of Yellow Spot. *Trans. Ophthalmological Society*, Vol. XXIII, 1903.

Jessop found in the central region of the fundus in one eye of a woman, aged 63 years, a tumour which had the following characteristics: it formed an oval, non-transparent swelling, covered by retina and crossed by retinal vessels. It was about 3 disc-diameters in length by $2\frac{1}{2}$ disc-diameters in width; its greatest height equalled 4 D. There were other changes in the fundus, as pigmented and white spots. $V. = \frac{6}{80}$. The patient's husband had died, many years ago, from phthisis. The patient herself had been told five years ago that "she was in a consumption."

Galezowski.—Neuralgia of the fifth pair and ophthalmic migraine. (*Névralgies de la 5^e paire et migraines ophtalmiques.*) *Recueil d'ophtalmologie*, XXV (1903), p. 3.

Galezowski recommends in violent neuralgia of the fifth pair the injection, beneath the skin of the temple or neck, of codein according to the formula given below: phosphate of codein, 0 gr. 50; pure carbonic acid (*sic!*), 0 gr. 01; distilled water, 10 gr. One cent. cube for injection after the induction of general anæsthesia by ethyl chloride or kélène.

H. DE V.

Sommer, G.—Upon the prophylaxis of acute Glaucoma. (Zur Prophylaxe des akuten Glaukoms.) *Woch. f. Therapie u. Hygiene des Auges.*, 9 Juni, 1904.

About ninety minutes after the subcutaneous injection of a solution of atropine and morphia to relieve the pain of pleuritis, **Sommer** observed a slight unilateral glaucoma, which yielded to the local use of physostigmine.

Berger.—A new binocular stereoscopic corneal microscope. (Sulla sostituzione della lente d'ingrandimento semplice con una lente binoculare stereoscopica.) *La Clinica Oculistica*, May, 1904.

Berger points out the advantage of binocular vision for many purposes for which we now use a single corneal lens, and he describes how two lenses may be arranged to give binocular vision by decentering and inclining them, so that their surfaces do not disperse the light as much as the Brucke-Liebreich combination. The apparatus is useful not only to ophthalmic surgeons but also to many other persons who at present use one eye only in their work—as, for example, watchmakers, engravers, and miniaturists. **Berger's** appliance is simple, and clearly of value.* **HAROLD GRIMSDALE.**

Cange, A. and Delogé, Ch.—The hygienic precautions to be adopted in order to combat diseases of the eye in Algeria. (Hygiène à suivre pour combattre les maladies des yeux en Algérie.) *Archives d'ophtalmologie*, octobre, 1904.

Sachsälber, A.—A case of choked disc after a successful operation for abscess of the brain. (Ein Fall von Stauungspapille nach erfolgreicher Operation eines Gehirn-abscesses.) *Zeitschr. f. Augenheilk.*, Band IX (1903), p. 408, and *Wochenschr. f. Ther. u. Hygiene des Auges*, November 12, 1903.

Sachsälber reports a case of abscess of the brain in a man, 33 years of age. The patient was operated on successfully, but choked disc came on after the operation. About five weeks prior to the appearance of the abscess he sustained a penetrating wound on the right side of his head. The injury was followed by pain in the head, giddiness, and vomiting. The symptoms pointed to an abscess in the right temporal region of the brain, and this was opened. Before the operation there could be seen in the right eye a large white focus of exudation in the upper-inner quadrant of the fundus, associated

* This useful appliance can be obtained, price 25 francs, from M. Arnhold, 13, Rue Auber, Paris.—EDITORS.

with slight hyperæmia of the papilla. In the left eye there was considerable hyperæmia without signs of inflammation. After the operation an access of optic neuritis was observed, and on the sixth day a picture of typical choked disc, which subsided in about six weeks. No disturbance of function, except increase in the dimensions of the blind spot. The author emphasises the fact that the increase in the neuritis could not be explained on the pressure theory, while it could be well accounted for on chemico-phlogistic grounds. A complicating meningitis could be excluded from Sachsaler's case.

Hinshelwood, James.—**The Eye Symptoms in Locomotor Ataxy.** (Report of Glasgow Medical and Chirurgical Society.) *Glasgow Medical Journal*, November, 1903.

A patient was shown at this meeting suffering from locomotor ataxy who had optic atrophy, Argyll Robertson pupils, peripheral contraction of the fields of vision, inequality of the pupils, and ptosis.

Murray, Gilbert D.—**An examination, personally conducted, of 4,608 railroad employees for acuity of vision, hearing, and colour perception.** *Annals of Ophthalmology*, January, 1903.

Of the 4,608 men examined by Murray, 3.01% were colour-blind, 2.58% had a weak chromatic sense, and 9.44% needed glasses or other means to improve their vision for distance.

Zimmerman, M. W.—**Four eye injuries with introduction of foreign substances not suitable for removal by magnet.** *Annals of Ophthalmology*, April, 1903.

Zimmerman's cases were :—(1) Brass or copper foreign body in the vitreous for fourteen years with the retention of normal vision; (2) Multiple wounds by a chestnut burr, including penetration into the anterior chamber and numerous imbedded spores; (3) Spontaneous extrusion of a glass fragment from the vitreous chamber; and (4) a fragment of stone in the lens.

Brewerton, E. W.—**A rare form of Nystagmus.** *Trans. Ophthalmological Society*, Vol. XXIII, 1903.

Brewerton found, in a female aged 22 years, external strabismus of one eye along with slight and variable horizontal nystagmus of both eyes. The nystagmus became very manifest on covering either eye, and under those circumstances was most pronounced in the squinting eye. Neither nystagmus nor diplopia could be produced by prisms or by coloured glasses.

With both eyes open, $V. = \frac{6}{8}$. Right eye alone, $V. = \frac{6}{8\frac{1}{2}}$, and left eye alone, $V. = \frac{6}{12}$ ptly. Fundus normal in each eye.

Krauss, Frederick.—A case of poisoning by hyoscine hydrobromide. *New York Medical Journal*, December 12th, 1903.

Three and a half hours after a drop of a solution of hyoscine hydrobromide (2 grs. to the ounce) had been applied to the eyes of a girl, 15 years of age, there developed excitement, incoherence, wildness of speech, hallucinations of sight, and inconsequential movements of the hands. The symptoms lasted for seven and a half hours, and then disappeared wholly after several hours' sleep. It is estimated that $\frac{1}{120}$ grain of hyoscine was dropped into each eye.

Tweedy, John.—The relation of ophthalmology to general medicine and surgery and to public health. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 1.

Noyon.—Carcinoma Parotidis and its consequences. (Carcinoom der parotis en zijne gevolgen.) *Ned. Tijdschrift v. Geneeskunde*, No. 17, 1903.

Case of removal of a carcinomatous parotid, in which the left facial nerve had to be cut away, after which the left eye, owing to a slight wound, lost sight by a never-ending series of grave and rebellious attacks of keratitis. As the globe was the seat of constant pains, and a cause of great worry to the patient because of the disfigurement which rendered impossible the continuation of her service in the hospital where she was a nurse, **Noyon** resolved to enucleate the eye.

After a short time neuralgia in the left side of the head occurred, and the vision of the right eye decreased slowly but constantly, so that total blindness resulted, without any other objective symptom than loss of pupillary reaction. An exact diagnosis could not be made, although several distinguished oculists examined the patient. Probably a recurrence of the malignant growth at the base of the skull had occurred, although the complete absence of changes in the disc rendered this diagnosis doubtful.

G. F. ROCHAT.

Rodgers, W. G.—Case of Acute Poisoning after the instillation of small dose of Atropine into the eye. *Glasgow Medical Journal*, August, 1903.

The patient was a man aged 73, who had had a cataract removed. Four days later the eye was dressed for the first time and 2 drops of a 2 per cent. solution of atropine

were instilled. Twenty minutes later there was low muttering delirium, and shortly afterwards the patient became violent, the face was very flushed, the throat dry, pulse and respiration rapid. Nепenthe 15 m. with $\frac{1}{2}$ oz. of whisky was given, and later on $\frac{1}{2}$ grain of morphia was injected. Both pupils were widely dilated and the respiration assumed the Cheyne-Stokes character. He rapidly recovered and was quite well the next day.

Le Roux.—Two cases of isolated paralysis of the VI pair of nerves consecutive to injuries of the head in children. (*Deux cas de paralysie isolée de la VI. paire consécutive à des traumatismes crâniens chez des enfants.*) *Archives d'ophthalmologie*, T. XXIII. (1903), p. 297.

Le Roux reports two cases in children where paralysis of the external recti followed injury to the head. In the first case, the paralysis disappeared from one side, but was permanent on the other. In the second case, one external rectus only was affected, and this got well after lasting two months. Abducens paralysis may be due to (a) fracture of the petrous portion of the temporal bone; or, (b) hæmorrhage from the inferior petrosal sinus. Prognosis is bad in the former, and good in the latter. As it is often difficult to distinguish between the two causes, however, prognosis must always be guarded in paralysis of the sixth nerve following injuries to the head.

H. DE V.

Bondi, M.—Two cases of spontaneous dislocation of the lens into the anterior chamber. (*Zwei Fälle von spontaner Linsenluxation in die vordere Augenkammer.*) *Wochenschrift für Therapie und Hygiene des Auges*, 3 Dezember, 1903.

In the first case, a man, aged 52 years, suffering from high myopia, had experienced ten years ago a dislocation of both lenses into the vitreous; four years later the left lens had been extracted from the anterior chamber where it had become lodged. The same secondary displacement now occurred to the right lens, which was brought back by Bondi into the vitreous by manipulation. In the second case, a woman, aged 39 years, also suffering from high myopia, had been blind in the right eye for three years as the result of a forward dislocation of the lens and secondary glaucoma. Ten days before seeing Bondi the left eye became similarly affected. By a successful extraction of the displaced lens, the sight of the left eye was preserved.

C. MARKUS.

Enslin.—Homonymous hemianopsia on the left side after carbon monoxide poisoning. (*Linksseitige homonyme Hemianopsie nach Kohlenoxyd-Vergiftung.*) *Klin. Monats. f. Augen.*, Januar, 1904.

The patient, a woman of 54 years, was examined five months after the carbon-monoxide poisoning had taken place. Shortly after the accident, she became aware of a defect of vision, since of any group of objects placed side by side before her, she could see only a certain number. Examination showed the visual power to be normal, but there was a marked restriction of field for colours towards the left in both eyes. For white the field was intact. The right eye showed a sector-shaped loss of field on the inner side. There was no sign of organic brain disease, paralysis, or the like. An interesting point was that the memory was shown to have been affected at first with regard to optical mental images (difficulty in finding her bearings in well-known places, etc.). Enslin refers the anatomical lesion to the coats of the brain (possible hæmorrhages), a view supported by the asymmetrical form of the field of vision, and the absence of any disturbance of the motor or sensory systems. A. BIRCH-HIRSCHFELD.

Gallenga.—On the unusual frequency of lid-abscesses during the summer of 1904. (*Insolita frequenza di ascessi flemmomi delle palpebre occorsi nel periodo estivo 1904.*) *La Clinica Oculistica*, Ottobre, 1904.

Gallenga has noticed that such abscesses usually make a very small fraction of all ophthalmic cases, about 0.1 %. During the last summer they were especially frequent, so that in the months of July and August, among 450 patients, there were 12 who were suffering from such abscesses. All were children, and in all the disease began with slight fever and gastro-intestinal disturbances. The pus was examined in each case, and the exciting bacteria were noted to be, in 10 instances, the staphylococcus pyogenes aureus and albus, and in the remaining two, the streptococcus pyogenes. Gallenga seeks for the cause of this unusual epidemic in the meteorological conditions of the year. The average daily temperature was very high, and the range of variation very small. All kinds of skin eruptions, sudamina, etc., were common. Among the poor who neglect all bathing, the scratching due to the sudamina would occasion small abrasions into which the bacteria of the skin could enter and set up formation of pus. For this reason, at all hospitals there had been an influx of patients suffering from superficial abscesses.

HAROLD GRIMSDALE.

Stephenson, Sydney.—Foreign bodies in the eyes of children.*British Journal of Children's Diseases*, November, 1904.

Among the several curious cases of foreign bodies in the eyes of children reported by **Stephenson**, is one where a girl, aged 5½ years, was found to present a greyish line embedded in the cornea. This was recognised as being a splinter of wood, not a vestige of which projected above the surface of the cornea. A radial incision was accordingly made close to the intruding substance through the entire thickness of the cornea, and in that way the foreign body was seized and withdrawn. It proved to be a sharp splinter of wood, one-eighth of an inch in length. The eye made a good recovery, without any entanglement of the iris in the corneal incision.

Isola.—Gangrene of the lids after chickenpox. (Gangrene de los parpados, post-varicelosa.) *Archivos de Oftalmologia Hispano-Americanos*, Febrero, 1905.

Isola records a case of this rare complication of chickenpox. The lids were treated by free bathing with 1% solution of cyanide, and the child eventually recovered without much damage. The author does not attempt to deal with the question of causation.

HAROLD GRIMSDALE.

REVIEWS.

Bulletin de la Société belge d'ophtalmologie, No. 18, Compte rendu analytique des communications faites à la dix-huitième réunion de la Société à Liège, le 11 juin, 1905. Bruxelles: Imprimerie, L. Severeys, 44, Montagne-aux-Herbes-Potagères, 1905.

The slim volume before us contains an account of the various communications made to the Belgian Ophthalmological Society, at its meeting at Liège, on June 2nd, 1905, under the presidency of Dr. Nuel. Coppez has a paper on the eye symptoms of traumatic neurosis; Pergens writes on visual acuity as influenced by dimension; Nuel, on the ætiology of irregular lenticular astigmatism; van Duyse, on a case of lympho-hyaline degeneration of the ocular conjunctiva cured by x-rays; de Vacleroy, on a new chloroform mask for operations on the eye; Dastot, on the vexed question as to whether we should, or should not, conceal the truth from those unfortunate beings menaced with blindness; and Brandes writes on orbital aneurism. These various communications will be analysed in due course in the columns of THE OPHTHALMOSCOPE.

Errors of Refraction and their Treatment: A clinical pocket-book for practitioners and students. By CHARLES BLAIR. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent, and Co., 1905. Price 2s. 6d.

The avowed object of Mr. Charles Blair's unpretentious volume of about one hundred pages is "to supply in a condensed form the more practical and clinical points in connection with errors of refraction." We consider that he has achieved his object. The book contains nothing but plain facts stated in a plain and comprehensible way. It will doubtless be found useful by those who have neither time nor inclination to peruse the larger treatises on refraction.

Atlas-Manuel de Chirurgie Oculaire. Par PROF. HAAB et DR. MONTHUS. Paris: Baillière et Fils. 1905. Prix 16 francs.

The popularity of Professor Haab's *Atlas und Grundriss der Lehre von den Augenoperationen* has led to the publication of a French translation, the work of Dr. Monthus, *chef de clinique* to the Chair of Ophthalmology of the Faculty of Paris. Judicious notes by the translator enhance the value of the volume, which is well printed and admirably illustrated with the original chromolithographs. We wish the translation every success.

Histoire de l'ophtalmologie à Lyon. Par ÉTIENNE ROLLET. Paris: 41 bis, Rue de Châteaudun. 1905.

This is a reprint of an introductory address delivered on January 7th, 1905, by Étienne Rollet, the newly-appointed professor of clinical ophthalmology in the University of Lyon. Professor Rollet traces the history of eye work in Lyon, the second largest town in France. Among the famous surgeons attached to the Hôtel-Dieu of that city was Guy de Chauliac (1348), who advocated the treatment of cataract by diet and evacuates. This plan he applied to John of Luxembourg, King of Bohemia, of whom it is related that he had caused his former medical adviser, who had promised, but failed, to restore the King's sight, to be sewn up in a bag and thrown into the river Oder. Guy in his turn also failed to cure the King, who became completely blind. As all readers of history know, the King, although grievously handicapped by loss of his sight, charged against the English at the battle of Crecy, and the "Blind King of Bohemia" met his death upon the battle field. A brief review of the work of a long list of worthies brings us down to the year 1862, when Gayet (who died only the other day) was appointed surgeon to the Hôtel-Dieu. He was the first incumbent of the Chair of Ophthalmology founded at Lyon in 1877. Some interesting details are given of Gayet's work.

Diagnosis from the Eye. A New Art of Diagnosing with Perfect Certainty from the Iris of the Eye the Normal and Abnormal Conditions of the Organism in General and of the Different Organs in Particular. By HENRY EDWARD LANE, M.D., Chicago: KOSMOS PUBLISHING CO., Ill., U.S.A. 8vo., pp. 156.

In the reviewer's library there stands the original work of Peczely, in which, as a basic principle, it is declared that the normal iris of the Caucasian race is azure-blue in tint. From this assertion, in conjunction with the fact that all new-born babes of healthy parentage have blue eyes, the author deduces the following laws: first, the greater this colour deepens, the more the subject is affected; second, the removal of the morbid material from the general system causes a return of the eyes to their normal tint; and, third, that brown-eyed children, or, at least, those whose irides are surrounded by a blackish rim, are the direct descendants of blue-eyed parents who were sufferers from "itch." That these views of nearly a quarter of a century ago constitute interesting reading to those who delight to delve into the curious cannot be denied; but when a translated exposition of their clinical value is made in this stage of progress in ophthalmology to apply to every form of disease, it becomes necessary to draw attention to the impossibility of the claim, and hence, to the uselessness of the method in such a broad general way. Shorn of its pretensions, rid of its artificial distinctions, and brought into its proper plane, it may, as the reviewer fully believes, have some value as a distinguishing sign and a prognostic factor in some cases of general vascular, lymph, and neural disease. Thus disencumbered of its vagaries and nonsense, it is worthy of both scientific and clinical study in a broad, generalised way.

C. A. O.

A Manual and Atlas of Medical Ophthalmoscopy. By SIR WILLIAM R. GOWERS. Fourth edition, edited by the Author and Marcus Gunn. London: J. & A. Churchill, 1904. Price 14s. od. *net*.

A fourth edition of *Medical Ophthalmoscopy* by Sir William Gowers and Mr. Marcus Gunn calls for no commendation at the hands of a reviewer. The book, as the French say, has already "made its proofs." It is the standard text-book on the subject in the English language, and no ophthalmic surgeon can afford to be without it.

The authors, by the way, speak of the autotype plates used to illustrate the book as being far more true to nature than chromolithographic plates. They claim that the absence of colour is

more than compensated for by the attention which its absence compels to the more important elements of form. Whatever may have been the case when the first edition of *Medical Ophthalmoscopy* appeared some five-and-twenty years ago, it is no longer correct to claim that autotype pictures are superior to those produced by the new tricolour process. We cannot help thinking that the book would be made more attractive to its numerous readers were coloured illustrations substituted for those that at present do duty. Moreover, some of the text-illustrations, notably that representing opaque nerve-fibres, *p.* 5, and tubercle of the choroid, *p.* 245, might well be replaced by others showing more detail and greater artistic merit.

Squint. Its Causes, Pathology and Treatment. By CLAUD WORTH, F.R.C.S. 2nd Edition. London: John Bale, Sons & Danielsson, 1905. Price 6s. net.

It is but little over two years since Mr. Claud Worth published his book on "Squint," and the good opinion then formed of it by THE OPHTHALMOSCOPE is justified by the amount of popularity that it has since obtained. This is shown by the fact that it has been out of print for a considerable time, and a second edition is now issued; in addition to this, it has been translated into German and published in Berlin. "In preparing the second edition," states the preface, "nothing has been altered or omitted. But some small additions have been made, and some matters more fully discussed."

Mr. Worth rightly insists on the necessity of the early treatment of squint. How often do we find a child of seven or eight years of age brought to hospital with the history that the practitioner who was consulted when the squint was first noticed, advised that nothing should be done until the child had attained a certain age; by that time the squint has become permanent, and the eye amblyopic, and the mischief which might have been avoided has been done. If surgeons would only realize Mr. Worth's teaching, that no child is too young to wear spectacles, should an error of refraction be present, many squints would be cured before the child was above a few months, or, at any rate, a year or two old. Amblyopic eyes, which the author believes are acquired and not congenital, would almost cease to exist.

The "Amblyoscope" is an instrument devised by Mr. Worth which most people know by name at least and which a considerable number of surgeons have used. It is one of the most efficient ways we at present have of training the fusion-sense, and if imitation is the sincerest form of flattery, Mr. Worth is to be congratulated on having devised an instrument that has

merited so much attention. The last chapter deals with the operations for squint, and a convenient and efficient method for the advancement of a muscle is accurately and carefully described. The book is full of commonsense advice, and we expect that this edition will be fully as popular as its predecessor.

CORRESPONDENCE.

[While *The Ophthalmoscope* will at all times welcome correspondence from its readers, the Editors do not hold themselves responsible for any views expressed in this column.]

Mitteilungen aus der Augenklinik in Jurjew.

20 September, 1905.

Sehr geehrter Herr College!

Im Septemberheft Ihres Journals, *THE OPHTHALMOSCOPE*, finde ich ein von Henry Power unterzeichnetes Referat über die von mir herausgegebenen "Mitteilungen aus der Augenklinik in Jurjew." Als Einleitung zu diesem Referat, gibt er eine kurze Beschreibung der Stadt Jurjew, die *ganz unrichtig* ist; da er durch Ähnlichkeit der Namen irreführt dieselbe mit Jurjewetz verwechselt hat.

Jurjew (früher Dorpat) liegt in Nordlivland an beiden Ufern der Embach, und hat annähernd 45,000 Einwohner; seine Universität ist im Jahre 1802 gegründet worden.

Bitte höflichst die Berichtigung Ihren Lesern bekannt zu geben.

Mit der grössten Hochachtung,

Ihr ergebener

PROF. TH. EWETZKY.

JURJEW (LIVLAND).

[It will be seen from Professor Ewetzky's courteous correction that the name Jurjew, mentioned in the review of his work "Mitteilungen aus der Augenklinik in Jurjew" (*see THE OPHTHALMOSCOPE*, September, 1905), does not refer to Jurjew Tolski, but is the modern designation of the town formerly known to the world as Dorpat, North Livland. We regret the misdescription.—EDITORS.]

Professor Hirschberg's "Ueber die Körnerkrankheit."

To the Editors of THE OPHTHALMOSCOPE.

Sirs,

The reviewer of Prof. Hirschberg's pamphlet "On Trachoma" (see THE OPHTHALMOSCOPE, May, 1905, p. 261) is amazed to find the professor taking offence at the opening sentences of that review, which ran as follows: "Professor Hirschberg undertook in the course of a lecture delivered before general practitioners, to discuss a disease of the eyes, which in some parts of Germany prevails to such a degree as to constitute a veritable scourge. His audience must have gained most useful knowledge from listening to him. The ophthalmic surgeon, however, will hardly find anything new or striking in the pamphlet. How could it be otherwise, as long as a lecturer on trachoma is unable to dispel the last uncertainty of diagnosis by announcing the discovery of the long-wished-for micro-organism, or by strengthening our therapeutical arsenal by the addition of a specific remedy?"

Prof. Hirschberg infers from these remarks that a sneer (!) was implied, because he had not discovered the trachoma-bacillus, and, *inter alia*, calls the reviewer a biassed judge and a man who stands condemned by his own words (!) It need hardly be said that Prof. Hirschberg has fallen a victim to a regrettable misinterpretation, and has read a meaning into the quoted lines which is not in them, and, certainly, was not in the mind of the writer. Still more deplorable is it, that Prof. Hirschberg should have indulged in the virulent remarks that adorn the 149th page of the *Centralblatt für praktische Augenheilkunde*, 1905. The reviewer, however, has no wish to enter into a controversy of such a kind with Prof. Hirschberg, where he knows that he would be ill-matched indeed.

October, 1905.

Yours faithfully,

THE REVIEWER.

NOTES AND ECHOES.

WILHELM HESS, we regret to record, is dead at the age of 75 years. He received his medical education at Geissen, Vienna, and Berlin. In the last-named city he enjoyed the close personal friendship of Albrecht von Graefe. Hess settled in 1858 at Mainz as an ophthalmic surgeon. He was one of the founders and perpetual Secretary of the Heidelberg Ophthalmological

Obituary.

Society. He possessed considerable powers of organisation, and throughout Germany was universally loved. His striking face and charming personality graced most of the ophthalmological gatherings in that country.

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**"Archiv für
Augenheilkunde."**

PROFESSOR C. HESS, of Würzburg, the son of Wilhelm Hess, has been appointed editor of the *Archiv für Augenheilkunde* and of its American edition, the *Archives of Ophthalmology*, in succession to Professor Schweigger, deceased. The appointment will be a popular one amongst all who enjoy the privilege of Professor Hess' personal acquaintance.

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**Newspapers
for the Blind.**

FROM a contemporary, the *Klinische Monatsblätter für Augenheilkunde*, we gather that a new periodical, the *Rivista di Tifologia*, concerned with the prevention of blindness and intended for those interested in the welfare of the Blind, has been founded at Rome under the editorship of Dr. Neuschuler. This item of news reminds us that our own journal, the *Braille Weekly*, which is printed entirely by the new Brailleotype process invented by Mr. J. W. M'Laren, is not supported too liberally in this country. The publishers (24, St. Giles Street, Edinburgh) have lately issued a rather pathetic appeal for increased support, not only in order that the paper may be placed upon a sound financial basis, but also that this useful production may be enlarged without any corresponding increase in price. We hope the appeal may be responded to liberally. The *Braille Weekly* costs 6/6 per annum, and contains news of current interest likely to be useful to those who have been unfortunate enough to lose their sight. In these days of universal charity it would be hard to find a more absolutely sound reason for generosity than that which inspires this humane publication.

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Motor Goggles.

A *concourse des lunettes* is being held in Paris. A member of the Automobile Club of that city has offered a money prize for the best pair of motor goggles, and by the liberality of other donors, the prize has now amounted to quite a considerable sum. The proper protection of the eyes during what the French call *le sport de vitesse* is becoming more important every day, and it may be hoped that the Paris competition will result in the evolution of something at once more elegant and less complicated than the present clumsy devices.

A new Society. THE eye surgeons of the Hanover district have founded a new ophthalmological society, under the name of the *Vereinigung niedersächsischer Augenärzte*, the inaugural meeting of which was held at Hanover on May 14th, 1905, under the presidency of Dr. Stölting. Communications were read by v. Hippel, Schieck, Stölting, Grunert, and Esberg. The secretary of the new society is Dr. Plaut, of Hanover.

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The Mercy Hospital, Denver. THE following have been elected as the ophthalmic and aural surgeons of the Mercy Hospital, Denver:—Active, Drs. John Chase, D. H. Coover, F. A. Davis, W. L. Hess, G. F. Libby, and E. W. Stevens; Consulting, Drs. J. M. Foster, and Edward Jackson.—*Ophthalmic Record*.

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International Congress of Medicine. AS readers know, the XVth International Congress of Medicine will assemble at Lisbon, Portugal, on April 19th, 1906, and will last for eight days. As regards the ophthalmological section, four subjects have been selected for discussion, viz.:—1. Myopia and its treatment, by Hess (Würzburg), Uhthoff (Breslau), and de Mello Vianna (Lisbon). 2. Ocular tuberculosis, by de Lapersonne (Paris) and E. Treacher Collins (London). 3. Blepharoplastic operations, by Eversbusch (Munich), and Cirincione (Palermo). 4. Sermutherapy, by Axenfeld (Freiburg), Römer (Würzburg), and Valude (Paris). Instead of Hygino Sousa, deceased, the section has appointed Dr. Xavier da Costa, of 29, Rua Barata Salgueiro, Lisbon, as secretary. Dr. Sousa Refoios, of Coimbra, is the president of the section.

* * * *

News Items. DR. EMIL V. GROSZ has been appointed to the Chair of Ophthalmology at Budapest in succession to Professor von Schulek, whose death was announced in our columns some little time ago. Dr. Best has been named professor extraordinary in Giessen. Dr. W. Matys and Dr. Z. Nejedly have been appointed *privat-docenten* in the Bohemian University of Prague. At Messina Dr. Palermo has been appointed to a similar office. Other appointments are: Dr. Gaetano Lodato, as *privat-docent* in

Naples ; Dr. Hirsch, in the German University at Prague ; Dr. Harms, at Tübingen ; and, finally, Dr. Piero Chiarini, at Rome. The oldest ophthalmologist in Bavaria, Gehimrat Dr. August von Rothmund, professor in the Munich University, attained his 75th year on August 1st last. He has taught in the University for nearly fifty years, and five years ago was relieved from the duty of giving formal lectures, and of conducting the eye clinique. In commemoration of the forthcoming silver wedding of the Imperial couple, the Province of West Prussia has decided to found a home for the blind. The Illinois Charitable Eye and Ear Infirmary has acquired additional ground for 20,000 dollars in order to erect a fireproof extension of its present building. That popular and dignified representative of ophthalmology, Dr. D. Argyll Robertson, who retired from active practice some little time ago, is announced to preside at the dinner of the Edinburgh University Club in London on November 8th, 1905. The will of the late Mr. William Curry, senior partner in the well-known firm of Messrs. Curry & Paxton, Great Portland Street, London, W., has been filed at Somerset House. The gross value amounts to £57,882 17s. 9d.

* * *

**British Optical
Association.**

THE sight-testing optician is clearly an intruder of abiding obstinacy of character.

It is now some years since this hybrid medical practitioner came upon the scene, and he is to-day established all over the Kingdom, with many letters after his name, and under a more or less successful attempt to adorn the spectacle makers' shop with the aloofness and dignity of the medical consulting room. The skill of the sight-testing optician was first formally testified to by the shoddy diploma of the Spectacle Makers' Guild. To the undying disgrace of the medical profession many of its diplomas are to this day signed by a member of the Ophthalmological Society. Some years ago, however, a further split took place in the schism, and the result was the birth of the British Optical Association. The work of that body is thus described in a passage from one of their recent Circulars, which runs :—

“The work of the Association during these ten years has not been without definite result ; Examinations have taken place twice yearly, scientific meetings and exhibitions arranged, a monthly optical journal is published, and since the inception in 1895, over a thousand opticians have been specially examined and certificated as being qualified to test sight ; many of them have taken up higher certificates, showing that their possessors have a knowledge enabling them at once to discriminate which cases require purely optical treatment, and which should be sent to a medical man.”

The Optical Association is now attempting to run a Bill through Parliament in order to constitute a new kind of hybrid

medical man. They ask to have a recognized status bestowed upon their calling in the same way as that conferred upon the dentists in 1878. The fact that candidates are obliged to take out a full medical curriculum and qualifications before being legally recognized as dentists, appears to have escaped the promoters of the Optical Bill. Do the latter propose to make medical qualification a condition of entrance to the sight-testing world? Otherwise what is the object of citing the case of the dentists as a parallel. However, past experience has hardly encouraged us to look for sound reasoning from the optician who works for a framed and glazed diploma, and mystic letters after his name. It is well to keep a wary eye upon these gentlemen, for they are well organised and know what they want. It seems absurd to imagine for a moment that such a Bill as that described will ever pass through Parliament. It is not so very long ago, however, that a great body of hybrid semi-medical practitioners were sanctioned by the Midwives' Act. In any case the General Medical Council should keep a close eye on the proceedings of the opticians, or we may one day wake up to find ourselves saddled with another swarm of self-satisfied vampires.

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ORIGINAL COMMUNICATIONS.

ON MENINGITIS FOLLOWING EXCISION OF THE EYEBALL.

BY

C. DEVEREUX MARSHALL, F.R.C.S.

ASSISTANT SURGEON ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS);
OPHTHALMIC SURGEON VICTORIA HOSPITAL FOR CHILDREN, LONDON;
HON. SECRETARY OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Considering the large number of eyeballs which have been removed for injury and disease, and considering also the close proximity of the brain and meninges, and the fact that the optic nerve is really a prolongation of the brain, and its sheath a prolongation of the meninges, it is perhaps a matter of surprise than otherwise to note how seldom it happens that meningitis follows panophthalmitis. Septic diseases are now so effectually combated, that a surgeon, if not the patient and friends, would consider it little short of a crime were such a disease as

erysipelas to follow an operation which was undertaken on uninfected tissues, for one's power of preventing such developments is probably as perfect as it ever will be, and nothing but carelessness on the part of the surgeon or his assistants would be now likely to lead to such a result.

With the eye things are rather different. It is impossible at any time to render the conjunctival sac absolutely aseptic, and if this were accomplished, and the integrity of the eye at the same time retained, there would still be a direct communication with the nose by means of the canaliculus and nasal duct, which would be a grave source of re-infection. In this way the ophthalmic surgeon is at a disadvantage, and is often accused of being careless in the rules he observes and the precautions he practises. Thus, we see most scrupulous attention paid by the general surgeon, not only to purifying his hands, putting on rubber gloves, etc., but even to having sterilised culture-tubes inoculated from his hands, in order to see if any organisms still survive the severe treatment to which they have been subjected. His clothes are also completely covered with a sterilized garment, and with the field of operation surrounded by similar things, it is almost impossible for him to re-infect his hands once they are rendered aseptic.

It is comparatively seldom that such elaborate precautions are taken by the ophthalmic surgeon, and it is indeed difficult to say what good would result if he did. It certainly is well to eliminate all possible sources of infection, and to avoid every appearance of evil; however, considering the fact that the surgeon's fingers are never used in an intraocular operation, except in the way of holding the handle of an instrument, or when handling needles or sutures, it can make but little difference to the eye whether he has gone to the full length of the extensive sterilization of his hands that are so essential for the success of a general surgical operation, where the hands are, perhaps, in direct contact with the wound. No one has, I think, ever suggested that the eyelids can be thoroughly sterilized, and the ready way in which operation wounds heal up in the lids could scarcely be expedited or rendered more satisfactory if the parts could be rendered surgically clean.

With regard to intraocular operations, it is the custom of some surgeons to have the conjunctival sac examined bacteriologically before they will undertake the removal of, say, a cataract. This is no doubt an excellent precaution. It must impress the patient immensely, and probably very rightly lead him to think that the surgeon considers no detail too small to insure the success of the operation. Still, with all this, it is exceedingly difficult, when looking at a crop of organisms from the conjunctiva, which are

practically always present, to say that in this preparation they are all harmless, or in another they are all, or any of them, dangerous, and I have little doubt but that the occasional suppuration of an eyeball will follow the performance of an intraocular operation, no matter how long the surgeon may have had the good fortune to escape such a disaster, and no matter how firmly he may believe in his own methods, as being essential to ensure the prevention of such a disaster.

In this communication I do not wish to confine myself entirely to suppuration after operation, but to discuss the whole subject of panophthalmitis, and the immediate and remote effects of this disease, together with its best and most rational treatment.

It is so well recognised that fatal meningitis may occasionally follow enucleation of an eyeball in a state of suppuration, that it has become almost an axiom with some surgeons that when panophthalmitis is present, the eye should not be removed. The common idea is that under such circumstances the only thing that should be done is to make an incision into the eyeball and let what will come away. Then, a certain period of time is allowed to elapse until the globe becomes a more or less shrivelled mass, when it may, with safety, be removed. Other operators will venture farther, and will not only incise the eye, but will scrape away the suppurating contents. By either of these procedures, the supporters of the method claim that meningitis is most likely to be avoided.

The grounds on which this claim is made are doubtless reasonable enough, for the advocates claim exemption from this dread disease after such treatment, although it is certainly difficult to see what good can accrue to the patient by having a mass of suppurating vitreous and choroid left within his sclerotic. The fact of leaving it open to the air, although it may aid drainage, is not likely to render it less septic. In addition, during the whole time that pus is present, there must be a risk of its soaking backwards and infiltrating the orbit, as, indeed, we know it does, and proof of this is easily seen in the matted and hardened tissues that are present when we excise such an eye. It is absurd to say there is no danger in this, since we may easily get the veins thrombosed with septic clot, and portions may be washed backwards into the circulation, and thus lead not only to septic meningitis, but even to pyæmia, which is always a possibility whenever an abscess is present containing septic pus. In addition to this, there is the lymph-stream to consider, and we all know how readily septic material may be carried by the lymphatics, as is shown by the enlarged and suppurating glands that may follow a septic sore on the hand or foot. It is thus obvious that if meningitis does not occur under these circum-

stances, it is certainly not because the local conditions are unfavourable ; they are, in fact, most likely to produce it.

The advocates of excision of a suppurating eyeball are in a far stronger position theoretically, for they claim that the presence of septic material within the eye is a very real source of danger, and the longer it is left the greater will be the probability of its becoming disseminated. Let us, however, look for a moment at the conditions which exist when such an eye is removed.

If the operation is undertaken as soon as suppuration is well established, there is a chance, in many instances, of removing the globe without allowing any of the inflammatory contents to escape. We are thus able to excise the abscess, walls and all, and the only direct communication with the brain which exists is along the sheath of the optic nerve. If, however, this stage is passed, we may find the orbital fat infiltrated with inflammatory material, and the contents of the eye may escape through a rupture of the globe during operation, or from a wound which has insecurely healed.

Here, undoubtedly, is a source of danger, for we not only stir up the parts that are already inflamed, but we also flood the recently cut tissues with the purulent contents of the eyeball, and it is not difficult to understand that septic organisms have thereby a very easy route opened to them into the meninges. On the other hand, there is never the smallest necessity to run this risk, for no matter how badly the eye is injured, it is always possible to remove the contents, and thoroughly to disinfect the conjunctival sac and the interior of the eye by the application of strong antiseptic solutions, which in this case may be used in as powerful a form as they can be applied to any other part of the body, inasmuch as we have no clear cornea to take into consideration. Immediately this has been done, the sclerotic can be excised, and no risk will be run of infecting the deeper parts. It may be urged, why not be content with eviscerating the globe only ; the sclerotic may then be excised later, if necessary. This might certainly be done, but what possible good could a shrunken sclerotic be to anyone, and if it be thoroughly soaked in septic discharges it may still contribute a fresh dose of poison to the tissues surrounding it, while the risk of removing it at the time can certainly be no greater than making another operation of it at a later date.

If an eyeball be removed with an average amount of skill, as it would be by an experienced operator, there are remarkably few globes that burst while being excised, no matter how badly they may have been injured. I admit that every now and then one comes across an eye that cannot be removed without its contents escaping, although in nine cases out of ten it is caused

by a careless or clumsy operator, and need not otherwise happen. Still, if it is likely to occur we had far better make no bones about it, but start by cutting away the cornea and then thoroughly clearing out everything that lies within the sclera.

It may be said, if you consider excision of the eyeball a safe operation, how do you account for the fact that several cases of death have been recorded after the removal of suppurating eyes, while few have occurred when they have been left. The explanation is simple. There are few who consider it safe to leave a putrid mass in such close proximity to the brain, and by far the greater number of such eyes are excised, and I maintain that the patients who die from meningitis after excision do so because the eye was left long enough to produce the disease before it was removed. I have myself known and recorded several cases in which meningitis followed suppuration of the eyeball when the eye was not operated upon at all. Two cases of this nature are mentioned in a paper, published by me, in the *Royal London Ophthalmic Hospital Reports*, vol. XIV, p. 312. The first was a case recorded by Mr. Waren Tay in vol. VII, p. 506, of the same *Reports*, and occurred in a woman, aged 68 years, whose cataractous lens had been removed two years before. Glaucoma then developed, and consequently an iridectomy was done. After the operation the eye suppurated, and the patient died thirteen days later. There was extensive suppurative meningitis; the ventricles contained purulent fluid; and there were many hæmorrhages over the brain. In the posterior part of the left orbit was an abscess containing blood-stained pus. It will be noticed that in this case the eye was not removed during life.

In another case, described in detail in the same paper, the patient was aged ten months. One eye suppurated from an unknown cause; later broncho-pneumonia developed, and the child died. The eye was not removed, but all the same the patient died from purulent meningitis, which was found to extend on to the surfaces of both hemispheres and down to the base. There was no excess of fluid in the ventricles, and no tubercle. The whole of the vitreous was suppurating.

In many of the recorded cases of death from meningitis after excision, the patients have shown all the symptoms of early meningitis before the eye was removed, and the fact that meningitis may be present for a considerable time without any symptoms whatever, is very well known. I gave details of one remarkable case of this kind in the paper previously mentioned. Aural surgeons are very well acquainted with this in those sad cases in which the disease follows suppuration of the middle ear. If we were to admit that removing a suppurating eye was a

dangerous proceeding, we should be forced to admit also that opening a mastoid in a similar condition was equally likely to produce the same disease. It seems to me that one view is as untenable as the other.

A case in which death occurred after enucleation of a suppurating eye has recently been published by Enslin and Kuwahara (*Archiv für Augenheilkunde*, Sept., 1904*), which they state points strongly to the view that suppurating eyes should not be removed. The patient was a woman, aged 64, whose eye had been chronically inflamed for a year or more after an infective corneal ulcer. The eye was quite blind and very painful. It was decided to remove it. At the operation the conjunctiva was found to be adherent to the eyeball, and no doubt the tissues behind the globe were also infiltrated. The eye was perforated during the operation, with the result that some of the contents escaped into the orbit. Symptoms of acute meningitis rapidly followed, and the patient died fifty-eight hours later. Streptococci were found in the globe, and likewise in the washings from the orbit taken before death. There was no evidence of acute inflammation of the orbit; streptococci were present in the nerve sheath; and chronic interstitial inflammation of the nerve itself was found. The *post-mortem* condition of the brain we are not told, but I should have but little doubt but that the surfaces of the hemispheres were largely affected, and had probably been so for weeks, although this is, of course, only surmise, but founded on the many similar cases I have seen and heard about; probably, also, a fresh dose of poison was admitted from the organisms which were let free from the interior of the eyeball. Here, now, is a typical instance of death occurring from faulty treatment. Very possibly the surgeons had not the chance of operating before, but whether they had, or had not, the facts obviously point to the conclusion that the patient died because a suppurating eye was left too long. In an abstract of this paper, published in the *Ophthalmic Review* for March, 1905, the reviewer states that this paper "is entirely opposed to the position taken up by Marshall in advocating enucleation." I am, however, quite content in putting it forward as a case entirely favouring the view I hold. If this eye had not been removed, the patient would have been worn out with pain, and I should with confidence have expected her to die from meningitis had she been left alone, although I think it more than likely that the clumsy way in which the eye was removed, and the fresh-cut tissues were infected, hastened the process. Such an eye ought never to have been left so long; it should have

*For abstract see THE OPHTHALMOSCOPE, May, 1905, p. 235.—EDITORS.

been excised weeks or months before; still, had such a case come under my care, I should have excised it whenever I saw it, no matter how long it had been suppurating, and I should not have felt justified in waiting a single hour longer than I was positively obliged. To leave such an eye is opposed to all sound principles of surgery, and reminds one of nothing so much as the antiquated, although popular, notion that an abscess had best be left to burst itself, and that a tooth causing an alveolar abscess should not be removed until the swelling had gone down. For some years past I have never seen a suppurating eye without advising its immediate removal, and of all the hundreds that have come under my notice in this condition, I have never once regretted the opinion I have held.

It has been held, that if such an eye be excised, it is dangerous to irrigate the orbit afterwards, because it may assist the dissemination of the organisms. If the fluid were pumped under pressure into a closed cavity it certainly might do so, but it is irrational to hold that irrigation of a cut and possibly septic surface with an antiseptic solution can in any way aid the development and dissemination of organisms, and this is the thing I always do if there be reason to suppose that the orbital tissues are already infiltrated.

It is never necessary to apply a tight bandage after excision except for the first hour or two. After the bleeding has ceased, which it will invariably have done after this time, a light pad and bandage are all that is necessary, and it is especially advisable to insure free drainage and irrigation after the removal of a suppurating eye. I feel sure that in this way meningitis and death may frequently be avoided.

SOME UNUSUAL FUNDUS CONDITIONS.

BY

ALEXANDER DUANE, M.D.,

NEW YORK CITY, U.S.A.

I. Black Spot at the Macula in Myopia.

The occurrence of a sharply-defined, circular black spot in the macula of myopic eyes has been signalled by various authors, notably by Fuchs, who has given a very clear account of the symptoms, course, and ophthalmoscopic appearances,

The cases are probably not very rare, and the only interest attached to those subjoined is, that in the first I had the rather unusual opportunity of seeing the patient both directly before, and also directly after, the development of the black spot, and was thus able to note the immediate effect produced by it on the vision. The second case was somewhat peculiar, in that the spot, although in other respects typical, was evidently not quite at the macula, and thus did not produce the usual great reduction of central vision.

CASE 1.—PROGRESSIVE MYOPIA ; DEVELOPMENT OF BLACK SPOT IN MACULA WITH SUDDEN REDUCTION OF VISION.—Samuel S. H., *ætat* 36, under homatropine :

Right c.—16.00D. 15/30 +

Left c.—12.00—3.00 cyl. 20°, 15/30+

From the history of previous examinations, it is evident that myopia has advanced 2 dioptrics in the last three years. Had worn under-correcting glasses for distance, and weaker glasses still for near.

In the fundus of both eyes, numerous, scattered, patchy accumulations of pigment and a terraced temporo-annular conus. In right eye also a spot of choroidal atrophy below the macular region, and a small spot of atrophy to nasal side of disc.

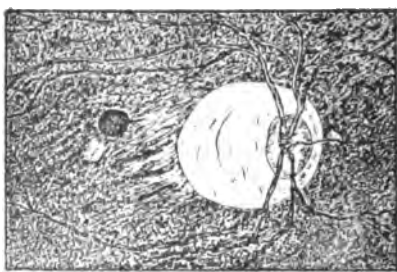


FIG. 1.

R. eye in Case 1. ; previous examination showed exactly the same except the black spot. No attempt has been made to reproduce vessels precisely, but otherwise representation fairly accurate, except that central spot was blacker than is shown in the drawing.

Two months later patient came in, stating that for one month he had noticed blurring of sight when left eye was shut, but not with both eyes open. R. with his glasses 5/200 (by slightly eccentric fixation, 15/200). Absolute central scotoma, about 3° in diameter. Fundus just as before, except that in macula there is a round spot of blackish pigment, somewhat thinned, and lighter coloured in the centre (*see* FIG. 1).

**CASE 2.—EXTRA-MACULAR BLACK SPOT WITH MYOPIA ;
COMPARATIVELY GOOD CENTRAL VISION.**

Amelia R., *ætat* 31 years.

Right c.—13'00, $\frac{2}{4}$ $\frac{0}{0}$

Left c.—19'00, $\frac{2}{4}$ $\frac{0}{0}$

Sharp, silvery-white, temporal conus, right and left ; spotty scattered pigmentation, but no rarefaction outside of conus. In left eye, horizontal oval black spot, like an ink blot, with palish centre, about $\frac{1}{8}$ the diameter of the disc, lies below and somewhat to the nasal side of the macula.

II. Coloboma of Macula.

**CASE 3. — COLOBOMA OF CHOROID AND RETINA
SKIRTING MACULA ; PARA-CENTRAL SCOTOMA.**

Ernest B., *ætat* 30, accidentally noticed, fifteen years ago, that he could not see well when he shut the right eye, although he could see well with both eyes open.

R. (under homatropine) c. $+0.50 +0.50$ cyl. 110° 15/10. L. 15/40 to 15/100 ; no glass improves, but skiascopy shows $+0.75$ cyl. 120° . L., absolute scotoma beginning 2° to the nasal side of fixation point and extending nasally 21° . Central vision

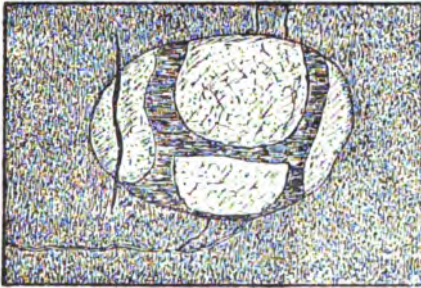


FIG. 2.

somewhat indistinct (relative central scotoma). Outside of scotoma all colors perceived normally and peripheral field for small dot normal.

In left eye, slightly below the macula, undermined oval pit, four to five disc-breadths wide and five to six disc-breadths long, enclosing four mottled white patches of sclera (*See Fig. 2*). These appear to be about 1 mm. below the level of the surrounding fundus. One pigment stripe crosses the innermost patch. Otherwise no pigment patches and no pigment border to coloboma. No retinal vessels traverse the area, although some are cut short right at the margin of the pit. One or two choroidal vessels

visible in the latter. The rest of the fundus, including the disc, normal. No temporal pallor of disc.

CASE 4.—COLOBOMA OF CHOROID IN MACULAR REGION WITH PARTIAL RETENTION OF RETINA.

Grace D., *ætat* 30 years. R., 20/20; under homatropine, hyperopia 1 D.; eye normal in all respects. L., 20/20; under homatropine, hyperopia of 0.75 D. Field (*see* Fig. 3) uniformly contracted down to about 20 degs.

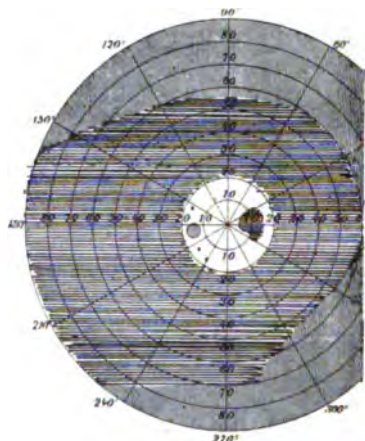


FIG. 3.

Within this area one or two small, scattered scotomata and one large scotoma on nasal side. Egg-shaped coloboma in macula, 2.5 by 1.0 disc-breadths in size (*see* Fig. 4). Covering rounded

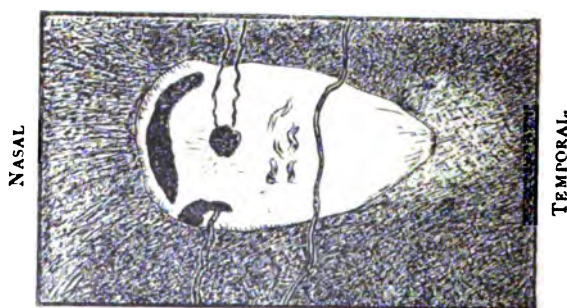


FIG. 4.

nasal end is heavy, coal-black pigment stripe; at lower border irregular pigment patch (both patches really blacker than represented in drawing). A large retinal vein (secondary branch of papillary vein) runs to this and is lost upon it. Another

pigment heap in centre of coloboma. Two fine retinal vessels run out to this and are lost under it. Another retinal vessel crosses coloboma at temporal end. On floor of coloboma several worm-like remains of vessels (apparently choroidal). Choroid near temporal end of coloboma attenuated, and near nasal end shows radial striation; otherwise normal, except for pigment heaps above noted. No accumulations of pigment on border of coloboma or elsewhere. Optic nerve normal; no temporal pallor.

III. Coloboma of Choroid with Filament projecting from it into Vitreous.

CASE 5.—George A. M., *at* 27 years, gradually failing vision in right eye. R., 20/200 varying. L., with slight astigmatic correction, 20/20. Right central scotoma about 5 degs. in extent.

In the right eye below the disc is a coloboma of the choroid



FIG. 5.

of ordinary appearance, with heavily pigmented edges and with some rarefaction of the adjacent choroid. Attached to the nasal border of this by very fine filaments, resembling the byssus of a mussel, is a slender, transparent, elongated, worm-like body which extends out a short distance (seemingly not over 1 mm.) into the vitreous, and then apparently runs parallel to the plane of the retina. Its free end is bent back, sharp, and hook-like. This body lies free in the vitreous, and while usually fixed, sometimes makes slight wavy movements, even when the patient's head is steady. On account of its transparency it is very difficult to see (*see* Fig. 5., in which the distinctness of the filament has been exaggerated purposely, in order to show its situation and attachment).

The poor central vision and central scotoma, as subsequent examinations showed, were due to a central choroiditis which produced a faint striate atrophy in the macula. No changes were observed in the vicinity of the coloboma or its appendage during the seven years that the patient was under observation.

UPON DISSEMINATED SYMPATHETIC CHOROIDITIS.

BY

DR. HENRI COPPEZ,

AGRÉGÉ À L'UNIVERSITÉ DE BRUXELLES.

In addition to the classical forms of sympathetic ophthalmitis, plastic and serous iridocyclitis, there exists a variety which is rarer, but still sufficiently characterized to merit a special description. This variety is disseminated choroiditis of sympathetic origin.

This affection manifests itself by the appearance of little, round spots of yellowish colour in the periphery of the choroid. These are very small, measuring scarcely $\frac{1}{10}$ of the papillary diameter; they are of nearly equal dimensions, but at times some become confluent in such a way as to form a focus of some little size with festooned edges. They are to be found more particularly near the branches of the retinal vessels, which often cross them. Their border is regular—not encircled by pigment.

There is generally little effect on the neighbouring parts. The papilla is slightly hyperæmic; the veins are more or less dilated. The vitreous body remains transparent. The iris does not present anything special; there is sometimes a little Descemetitis. Perikeratitic injection is absent or very slight.

After several months, these deposits disappear, leaving behind no traces, or they become atrophic; they bleach, but without abnormal pigmentation; others persist without modification.

The prognosis is favourable. The greater part of the cases known have recovered. Atropine and mercurial injections are recommended, and, above all, a prolonged sojourn in a darkened room.

The usual forms of sympathetic ophthalmitis are sometimes accompanied by similar lesions. Then, however, there must be a concurrence of favourable circumstances in order to recognise the deposits. The media must be clear enough in such a case to render ophthalmoscopic examination possible, which is, unhappily, not always the case. This disseminated choroiditis, whatever it may be, does not resemble any other form of

choroiditis. It is characterized by the smallness and regularity of the spots; their arrangement behind the terminal ramifications of the retinal vessels; and by the absence of pigment.

It is somewhat difficult to explain the mode of formation of these foci. S. Osaki (*loco citato*), who has observed a similar case in the Marburg clinic, believes that irritating substances, parts of the iris and of the ciliary body, go backwards, carried along by the lymphatic current. The lymphatic passages surround the vessels. In places they enclose little accumulations of lymphoid cells. These accumulations, under the action of irritating substances, develop exactly like the lymphatic ganglia, and thus become visible under the ophthalmoscope.

The cases of disseminated sympathetic choroiditis hitherto published are few. The following may be briefly cited:—

1. **Eversbusch.**—(*Mittheil. aus der Univ. Augenkl. München*, I, 1882). Young girl, *ætat* 22 years. Enucleation of the sympathising eye. Complete cure in several weeks. The spots disappeared completely.

2. **Dolschenko.**—(*Russische Zeitschrift für Ophthalmologie*, 1884. Ref. *Centralbl. f. prak. Augen.*, 1885, p. 387). Two cases of sympathetic ophthalmia, with some foci of disseminated choroiditis.

3. **Lepiat.**—(*Annales de la Société médico-chirurgicale de Liège*, No. 1, 1888). Chorio-retinitis occupying the lower half of the globe, with disappearance of the corresponding visual field. The lesions were not so characteristic as in the other cases.

4. **Schirmer.**—(*Archiv für Ophthalmologie*, xxxviii, 4, page 95, 1892). Man, *ætat* 20 years. Sympathising eye atrophied. Troubles of the vitreous body in the other eye, with an accumulation of atrophic pigment and spots in the choroid.

5. **Hirschberg.**—“*Ueber sympathische Augenentzündung.*” (*Centralbl. f. prak. Augenheilk.*, 1895, p. 80). The author remarks that the same foci can be found in the wounded eye. This case concerns a little girl, *ætat* 6 years. The sympathising eye was not enucleated. The evolution had not stopped at the time of the publication of the article.

6. **Caspar.**—“*Chorioiditis disseminata sympathica.*” (*Klin. Monatsbl. f. Augenheilk.*, 1895, p. 179). Child, *ætat* 9½ years. The largest foci, which, however, do not exceed $\frac{1}{8}$ diameter of the disc, enclosed in the centre a little pigmented spot. There was never an edging of pigment. The affection dated from 3½ years of age. The acuity of vision was satisfactory. The injured eye had not been enucleated, but was atrophied.

7. **Haab.**—(*Ophth. Gesell. Heidelberg*, 1897, p. 165). Report of four analogous cases. The faithful reproduction of

one of these cases is to be found in Schirmer's "Sympathische Augenerkrankung," Graefe-Saemisch, *Handbuch der Gesamten Augenheilkunde*, 2 Aufl., 23rd part, and in Haab's Atlas of Ophthalmoscopy, 2nd part, Fig. 39).

8. **Osaki.**—(*Arch. f. Augenheilk.*, XLV, p. 126, 1902.) Man, *ætat* 31 years. Cured sympathetic iridocyclitis. Characteristic spots in the choroid.

Personal Observations.

1st Case.—Alfred D., *ætat* 17 years, was wounded in the left eye on 15th December, 1904, while handling a kitchen knife. When, on the following day, he came to consult me, I found a very extended wound, 3 c.m. long, in a half circle, involving the sclerotic and the cornea. On the level of the limbus, the iris had a very pronounced prolapse. The crystalline lens was opaque; the tension was reduced to the minimum. There was no perception of light. On 17th December, the herniated parts of the iris were excised; 17th January, 1905, the patient left the clinic in good health. A little circumcorneal injection, however, persisted.

On the 10th February, I found the left eye atrophied, injected, and painful on pressure. The iris was of a dirty colour; violent headaches. As regards the right eye, there existed very slight pericorneal injection; the pupil re-acted normally. With Berger's binocular-glass, however, one could verify several minute grey spots upon the posterior surface of the cornea. The visual acuity was normal. With the ophthalmoscope, one could discover nothing suspicious; the papilla has its usual appearance.

Enucleation was performed the same day. The patient was put into a darkened room, and subjected to mercurial friction daily. Under the action of the atropine the pupil was dilated to its maximum. From March 2nd, there were added to the treatment sub-conjunctival injections of chloride of sodium, 2%, from day to day. At the same time there was found in the lower part of the choroid, towards the equator, a series of very small spots, measuring scarcely $\frac{1}{10}$ or $\frac{1}{8}$ of the papillary diameter. There were about twenty of these spots, which were sometimes confluent, and formed then a festooned *plaque*. They were situated principally behind the retinal veins. There were no opacities in the vitreous body. The visual acuity was normal. The tension was good.

On the 25th March the papilla has resumed its normal aspect. The atropine has been discontinued for ten days. There was no longer perikeratitic injection or corneal deposits. In May the cure was maintained, half of the choroiditic spots were effaced. The others persisted without any change. There was neither atrophy nor pigmentation.

2nd Case.—L. Lucien, farrier, *ætat* 36 years, wounded July 19th, by a fragment of hot iron. On the following day, on the arrival of the patient at the clinic, there could be diagnosed, apart from a slight burn of the eye-lashes, a linear wound, several millimetres in length, occupying the ciliary zone of the sclerotic. Through this wound, which was situated immediately above the cornea, the iris had prolapsed. The perception of light was satisfactory. There were orbital and pericorneal pains.

After several days the wound cicatrised, and the patient left. He came again on September 9th, in order to undergo an iridectomy, the eye having become the seat of some glaucomatous phenomena. The operation was carried out without incident, and the patient went out on September 24th. He returned on October 10th, the left eye having become very painful. It was markedly injected; the vision of the other eye was reduced, and the globe was hyperæmic and sensitive to pressure. The eye was enucleated the same day. Despite energetic treatment (atropine, warm compresses, mercurial inunctions, sudorific injections of pilocarpine, darkness) the right eye became the seat of an intense iridocyclitis, with marked pericorneal injection, Descemetitis, and dull papilla. On the 20th October, the fundus of the eye became unilluminable. In the month of November, the mercurial friction was replaced by two injections a week of:—

Mercury Biniodide, 1 gramme.

Sodium Iodide, 1 gramme.

Distilled Water, 50 grammes.

Dose. — $\frac{1}{2}$ Pravaz syringe.

After several changes, the fundus of the eye cleared up, and in January, 1905, the papilla again became visible.

On July 11th, 1905, I verified the following phenomena:—there was no longer any circumcorneal injection. The pupil was dilated ovally by atropine, which the patient still instils twice a week. There were numerous posterior synechiæ. The Desemetitis had nearly disappeared. The vitreous body contained a fine dust and some translucent membranes. The papilla was normal. In the choroid, towards the periphery, there were little round spots, yellowish in colour, situated behind the retinal veins. These spots were absolutely analogous to those described in the first case, but I could discover no more than five or six of them. The acuity of vision was half normal.

CLINICAL, PATHOLOGICAL, AND THERAPEUTICAL MEMORANDA.

RESTORATION OF SOCKET FOR CARRYING ARTIFICIAL EYE.

BY

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READER IN OPHTHALMOLOGY IN THE UNIVERSITY OF OXFORD; SURGEON TO THE ROYAL EYE HOSPITAL, SOUTHWARK, LONDON.

One hesitates to claim any procedure as new, for often the same idea has occurred to others and has been actually carried out. So far as I know, however, the following operation has not been previously described.

The class of case to which the operation is applicable is that in which the carrying power of the lower lid has been destroyed by wearing an artificial eye that has become rough, or one that has always been a misfit. Under these circumstances, the lid has become everted and flattened, while a mass of cicatricial tissue has often formed upon its surface. The restoration of a lid in this condition is always, I think, a matter of the greatest difficulty. I have known of more than one instance where the mass of cicatricial tissue was excised, in the hope that when the pressure of the adventitious tissue was removed, the scar resulting from excision would draw the lower lid into its proper position. I believe any operation carried out on these lines to be wrong in principle, inasmuch as the mass of newly-formed tissue will disappear of itself to a great extent if no artificial eye be worn for some months. Besides, the operation effects little more than to draw the lower lid somewhat more inwards towards the orbit, without at the same time raising it, so that it can keep an artificial eye in place. It has an additional disadvantage, namely, that the loss of tissue involved in its performance makes subsequent attempts to remedy the defect more difficult.

In the few instances where I have performed the operation to be now described, the results have been uniformly successful, although two of the cases had been treated without benefit by other procedures.

The steps of the operation are briefly as follows:—A large needle, threaded with stout silk, is passed from the conjunctiva of the lid beneath the skin, and made to emerge in the patient's mouth, between the cheek and the gum at a point opposite the angle of the mouth. The needle is withdrawn and threaded with the other end of the silk, and again passed through the conjunctiva, about half an inch away from the first puncture, and made to emerge in the mouth at the same point as the first thread. The two ends of the suture are next tied over a piece of match or rubber tubing, lying between the cheek and the gum, and the match or tubing is twisted two or three times a day, until the silk cuts out. This generally happens in the course of three weeks or so, leaving a band of cicatricial tissue which, by traction at its base, effectually raises the lower lid. The point of entry of the needle should correspond, one to the inner and the other to the outer, side of line of conjunctiva, that is designed for the new sulcus. One must not be too ambitious; it is better to approach the margin of the lid rather than the depths of the orbit, since in the latter case one might make a deeper sulcus, but the former plan is the more certain.

A good deal of suppuration—the more the better!—occurs in the track of the silk. In one of my cases, an abscess formed on the cheek, which called for incision, but it left a tiny scar only, and in no way prevented a successful result. After the suture has cut out, the stitching of the lids together with a single suture, over a small artificial eye, for two or three weeks, has appeared to me to help to mould the restored portion of the lower lid. A good result, however, can be obtained without having recourse to this second operation.

OPHTHALMOSCOPIC APPEARANCES OF A CASE OF PERIVASCULITIS OF THE RETINA AND CHOROID:

**Gradual Return to the Normal under the Administration
of Basham's Mixture.**

BY

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LECTURER ON OPHTHALMOLOGY, U.S. NAVAL MEDICAL SCHOOL.

The patient is a young woman, now twenty years of age, who first came under my observation on November 17th, 1897, when a child twelve years of age.

TO ILLUSTRATE DR. MYERS' CASE OF
PERIVASCULITIS.

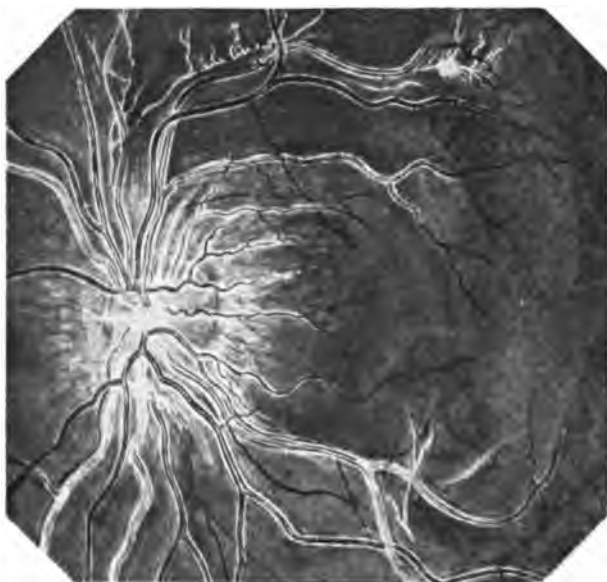


FIG. 1.



FIG. 2.

She was brought because of some discomfort about her eyes when doing school work. At that time her retinae were normal in appearance. Her vision was 15/20 with each eye. She had compound hypermetropic astigmatism. Under full atropine cycloplegia, her correction was:—

R.E. + 0.75D. with + 0.75D. Cyl. axis 90° V. = 15/15.

L.E. + 0.50D. with + 0.75D. Cyl. axis 90° V. = 15/15.

She used this correction for near work until October, 1903, when her refraction was again estimated by an oculist in Boston. She states that she never used this last correction, and that she has lost both the glasses and the formula. Between January and March, 1903, she had a swollen gland in the neck, tonsillitis, and an attack of epidemic influenza, and was ill about two months; she would recover enough to be up and about, and then have a relapse. Her throat was treated in Boston from April till September, when she had the tonsils and the adenoid growths removed by operation. In May, 1904, she had an attack of neuritis of the right arm and forearm, which lasted for six weeks. In December, 1904, she developed a swelling of the right knee joint; the joint was much swollen but not very painful; the swelling soon subsided, but was followed by another attack in a less aggravated form, which did not last so long.

The patient again came under my observation on January 14th, 1905. She has developed into a tall, stylish-looking woman, with light hair, blue eyes, and a sallow complexion. She complains that her eyes are not comfortable, and that she has a sensation of strain after using them, especially when sight-seeing or shopping.

Her vision is 15/15 with each eye. She gives a decided family history of gout. She says her right hand shakes after any excitement; that she is losing weight; and that she is always tired. Her legs are "boggy" above the ankles; she has polyuria; and rises, at least once, every night to pass urine. Heretofore, repeated examinations of her urine have been negative, but in the last examination (May 1st, 1905) minute traces of albumen are reported, but no casts. Heart sounds normal. On examination, her fundi present the remarkable appearance shown in the picture. The perivasculitis is widespread throughout both eye-grounds, but is decidedly more marked in the left (*see* Fig. 1). The lymph-channels of almost every red blood-vessel appear varicose. In many places, particularly in the upper and outer fields of the left eye-ground, fully distended lymph-channels, without visible red-blood vessels, are seen. The distension reaches the peripheral filaments and appears as arborescent terminals. The white striæ are almost solid around the discs, fading off in the surrounding retinae, like a halo. This condition is well shown in Fig. 1.

The patient was purged with calomel in broken doses, and placed upon a teaspoonful of Basham's mixture,* three times a day. This treatment was continued for ten days very regularly, but was interrupted at the end of that time by illness and death in her family. She returned to me on March 28th, 1905; the change in her eye-grounds was then so striking that I again had them painted by Miss Washington, and the left one is shown in Fig. 2. She resumed the Basham's mixture, and at the moment of writing (May, 1905), the lymph stasis has gradually lessened, but is still quite observable, particularly in the left eye.

It is my impression that the condition has been caused by a gouty exudation into the lymph-channels of the retinal vessels.

AN IMPROVED THERMO-CAUTERY FOR EYE WORK.

BY

SYDNEY STEPHENSON,

LONDON, ENGLAND.

It is needless to speak of the utility of the cautery in eye work, since the fact is widely recognised and fully acted upon by every practical ophthalmologist. When we turn, however, to the actual instrument employed, there still seems to be room for improvement. The device of a platinum probe, a squint-hook, or a knitting-needle, heated in a spirit flame, is as unsatisfactory as it is simple. It may be dismissed without further discussion. The thermo-cautery, in the shape of Paquelin's well-known instrument, is far too cumbersome for the neat performance of the more delicate operations of eye surgery. Besides, it is not altogether devoid of certain risks connected with the use of a highly explosive liquid like benzine. These drawbacks have, doubtless, led to the more or less general employment of the galvano-cautery, an admirable appliance, although one not altogether devoid of inconveniences. The current must be supplied from batteries, accumulators, or from the street main. Batteries and accumulators are cumbersome things to carry about, and never seem to be in working order just when they are most urgently needed. The employment of the street current implies in the first place that it is laid on; and, secondly, demands the use of a special convertor costing several pounds. Lastly, the action of the glowing wire is apt to be hampered by the moist tissues of the eye short-circuiting the current (Haab).

*Basham's mixture is a preparation of iron much employed in the United States. It contains tincture of the chloride of iron, 2 parts; dilute acetic acid, 3 parts; spirit of Mindererus, 20 parts; elixir of orange, 10 parts; syrup, 15 parts; and water, 50 parts. Dose.—1 to 8 drachms.—EDITORS.

Some little time ago Mr. W. H. Beach brought under the notice of the profession (*Lancet*, December 17th, 1904) a thermocautery of simple and ingenious character. The idea, which originated with Paquelin, of keeping a platinum chamber glowing by means of hydro-carbon, was retained, but Mr. Beach dispensed with the bottle containing the explosive liquid, and in

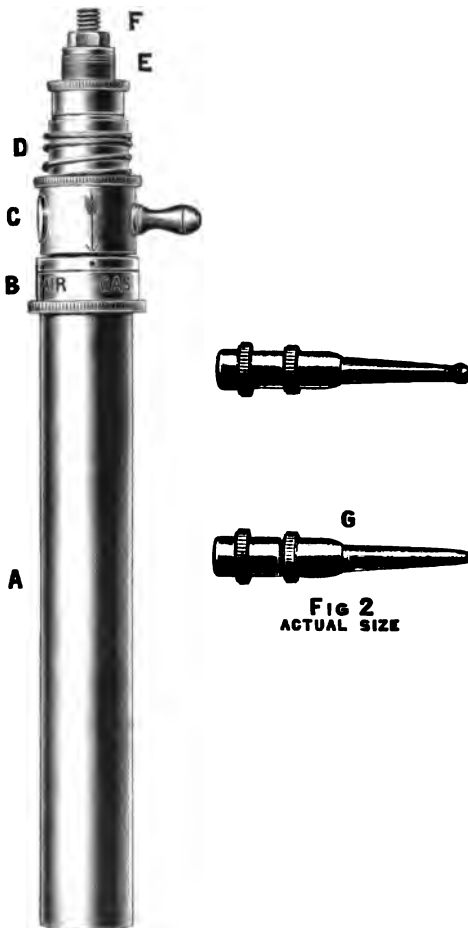


Fig 1
ACTUAL SIZE

Fig 2
ACTUAL SIZE

order to minimise deposit of soot, contrived to aerate the gaseous mixture of hydro-carbon and air. By a simple arrangement he succeeded in regulating with much nicety the proportion of gas and air, thus ensuring a rapid rise in temperature (to 2,000° F. in

thirty seconds) in the working point of the new cautery. Other improvements followed, such as a wire gauze screen to prevent the gaseous admixture from exploding or "firing back," and an insulating block, to oppose the maximum degree of resistance to the passage of heat to the stem or handle of the instrument.

A few words of more minute description will render the intimate construction of the thermo-cautery intelligible to readers. The cautery (fig. 2) is made up of the following parts.—The hollow handle (A), which acts as a combined reservoir and vaporizer, is lined with cotton wick, which is saturated with hydro-carbon (petrol) before using the instrument. The trunk (B) comprises an aerator, a refrigerator, a stop-cock, and a collar (C), kept in place by a spring (D). The collar carries an index and an air-tube, the latter forming an attachment for a rubber bellows and tube (not shown in the drawing). A heat-resisting block (E) contains a gauze septum, and a standard (F), to which the working points are secured. The points shown in Fig. 2 are of platinum, hollow, and perforated near the base by a tiny hole (G), through which the products of combustion are blown obliquely backwards.

To work the instrument, the vaporizer (A) is unscrewed, and sufficient petrol is poured into the handle to supersaturate the wick lining, and the excess liquid is returned to the bottle. Having screwed the vaporizer firmly to the trunk (B), the bellows-tube is connected with the nipple. The index, marked by an arrow on the collar (C), is set directly pointing to the tested spot, indicated by a dot engraved upon the trunk (B), the working point is then screwed to the connecting standard (F), and plunged into the spirit-flame for about thirty seconds. As soon as the platinum point has become slightly red, the bellows are squeezed, and the point should glow.

Realising the possibilities in ophthalmic work of this instrument, I suggested to Mr. Beach that a small model should be made for use in eye work. Accordingly he has constructed an instrument (shown above), the length of which is 5 inches, the diameter $\frac{1}{4}$ inch, and the weight $1\frac{1}{4}$ oz. It is provided with a couple of working platinum ends, one of which is more or less pointed, and the other slightly bulbous (*see* fig. 2). I have found the modified cautery a most efficient instrument, capable of doing whatever the galvano-cautery can effect. A few minutes' experience will allow anybody to use the instrument well. The sole difficulty lies in the exact adjustment of the index, the least variation, even $1/75$ th of an inch, of which from its proper position over the tested spot would make the platinum point dull in working. Hence, it is advisable, after having once adjusted the instrument precisely, to leave the index arrow in place.

The cautery is packed in a neat wooden case (7in. $\times$ 3 $\frac{3}{4}$ in. $\times$ 2in.), which contains, in addition to the cautery itself, a spirit lamp, and a small metallic container for the petrol. The complete outfit can be obtained from Mr. W. H. Beach, Bridgnorth, Salop, England, at a cost of £3 15s. od.

NOVELTIES.

A LENS-CENTRING INSTRUMENT.

The correct centring of a spectacle lens is a matter of considerable importance. Faulty centring is not infrequently the cause of discomfort to the spectacle wearer, and it is a fault not always easily detected, especially in the case of oblique, cylindrical, or bifocal lenses.

Messrs. C. W. Dixey & Son, of 3, New Bond Street, and 2c, Welbeck Street, have devised a little instrument which answers admirably the purpose of testing the centring of a spectacle lens. Three points, a perforated disc, a spot on a glass stage, and a cross bar, are set in alignment; an interposed lens disturbs the alignment, which is only restored when the lens is so adjusted that the line of alignment passes through the optical centre. This point is conveniently marked with a glass pencil.

The instrument also contains a scale of angles with a movable cross-bar, so that it may be used to test the setting of cylinder axes.

CURRENT LITERATURE.

NOTE.—Communications of which the titles only are given either contain nothing new or else do not lend themselves to abstract.

1. MALFORMATIONS.

- (1) Greeff.—On anophthalmos and other eye deformities and their etiology. (Ueber Anophthalmos mit anderen Missbildungen am Auge und deren Ätiologie.) *Archiv für Augenheilkunde*, 1904, p. I.
- (2) Matys, V.—A malformation of the eye, caused by an amniotic band, in a human foetus of four months. (Eine Missbildung des Auges, bedingt durch ein amniotisches Band, bei einem menschlichen Embryo aus dem vierten Monat.) *Zeitschrift für Augenheilkunde*, Februar, 1905.
- (3) Cosmettatos, G. F.—The eye in anencephaly. (De l'œil des anencéphales.) *Archives d'ophtalmologie*, juin, 1905.

- (4) **Ovio.**—A case of bilateral anophthalmos. (*Caso di anoftalmo bilaterale.*) *La Clinica Oculistica*, October, 1905.
- (5) **Paramore, R. H.**—A case of anencephalic monster. *Lancet*, October 14th, 1905.

(1) **Greeff** describes a case of anophthalmos, with various other congenital defects, in a female child one and a half years old. There was complete absence of the right globe. The lids were well developed, but the upper punctum was absent, and the eyelashes were practically absent from the lower lid. There was a fairly well-developed conjunctival cavity, but no trace of a globe. Two obliquely-placed bands were found at the outer angle of the eye. The right cheek was more prominent than the left, and there was a large defect in the development of the zygomatic arch, which, however, only slightly affected the orbital margin. On the right side there was slight macrostoma. On the left side of the mouth there was a partial hare lip, and a slight depression on the skin above it leading up a short distance towards the inner angle of the left eye. Both eyelids on this side showed colobomata. The upper eyelid had no punctum. It was present on the lower eyelid, but there was no communication with the nose, and probably no development of a lacrymal duct on that side. The left eye itself was normal. The palate was narrow and high and deeply cleft, and on the right side a bony prominence could be felt which corresponded to the deep depression in the zygomatic arch mentioned above. Greeff, in a very interesting paper, accounts for the development of these various defects by the pressure of amniotic bands in the early stages of foetal life. He gives two good figures of foetuses in support of this view. **LESLIE PATON.**

(2) **Matys** describes in detail the microscopic examination of this interesting malformation, in which it appears that an amniotic band became adherent to the first visceral cleft, and by tension caused an enlargement of the conjunctival sac, and by pressure caused the lids to unite with the sclera and cornea, and at the same time to dislocate forwards the whole eyeball. **A. LEVY.**

(3) An anencephalous monster, which survived birth nearly five hours, manifested bilateral exophthalmos, and dull and insensitive corneæ. At the autopsy, all internal organs were sound, but the brain was represented by a thin-walled cyst, containing serous fluid. No traces could be found of the chiasma or the intracranial part of the optic nerve. Imperfect medulla present; spinal cord very small. The eyeballs measured 10mm. by 17mm. by 14mm. The optic nerve, much attenuated, was 18mm. in length, and ended in a fibrous tract at the sella

turcica, without uniting with the opposite nerve to form a chiasma. Microscopical examination of the eye showed, among other things, signs of corneal ulceration, atrophy of iris and ciliary processes, thickened and vascular sclera and choroid, and folded retina, of which the ganglion cells presented an arrest of development, while the layer of nerve-fibres was absent. The hyaloid artery was large and gorged with blood. The optic nerve, composed of vascular connective tissue, contained no nerve-fibres. The vitreous body was made up of slender fibrillæ, anastomosing and forming meshes, filled with a finely granular material. S. S.

(4) **Ovio's** case was an infant who died a few days after birth. The eyelids and palpebral fissure were well formed, though small, but no trace of an eye could be seen. The parts were examined *post mortem*, and complete absence of the eye, optic nerves, chiasma, tracts, and external geniculate bodies were observed. These cases of true anophthalmos are rare; the arrest of development takes place early during the first few days of foetal life. The optic vesicles fail to appear, and the other defects are secondary to this. HAROLD GRIMSDALE.

(5) A male foetus, although otherwise well developed, was born with a peculiar condition of the head. **Paramore** found a normal base, but the rest of the skull was absent, being replaced by two or three black, bulbous, non-pulsating tumours, of semi-solid consistence. These tumours were attached to the base of the skull, where the sella turcica could be recognised with the finger as lying between them. The eyeballs were very prominent owing to the fact that the orbital plates and external angular processes of the frontal bone had not grown forward to cover in the eye, a lack of development due, in its turn, to absence of the frontal lobes of the brain. The mother, 20 years of age, was herself rather a stupid person.

II. AMAUROTIC FAMILY IDIOCY.

- (1) **Eliasberg, M.**—A case of Tay's amaurotic family idiocy. (Ein Fall von Tay-Sachsscher amaurotischer familiärer Idiotie.) *Zeitschrift für Augenheilkunde*, Juni, 1905.
- (2) **Poynton, F. J. and Parsons, J. Herbert.**—Amaurotic family idiocy. *Trans. Ophthalmological Society*, Vol. XXV, 1905.

(1) **Eliasberg** recounts a case of this interesting and rare disease occurring in a family in which at least two other

children (out of seven) suffered from a similar affection. This case is remarkable in its absolutely typical appearances and course. A. LEVY.

(2) **Poynton** and **Parsons** report briefly a typical case of amaurotic idiocy in a Jewish child, aged 13 months.

III. THE SURGICAL TREATMENT OF ASTIGMATISM AND MYOPIA.

(1) **Deschamps, D.**—Modification of the corneal curvatures under the influence of sub-conjunctival injections; their action on astigmatism. (Modification des courbures de la cornée sous l'influence des injections sous-conjonctivales; leur action sur l'astigmatisme.) *La Clinique Ophthalmologique*, 25 mai, 1905.

(2) **Maddox, E. E.**—A new operation for moderate short-sight. *British Medical Journal*, October 21st, 1905.

(1) **Deschamps** has satisfied himself that the soldering-down effect of repeated sub-conjunctival injections, so that a dragging action is produced upon the cornea at the site of the injections, results in distinct alteration of the corneal curvature. In the case which first drew the writer's attention to the facts a patient with bilateral H. of 0.50D. came to have H. 2.0D. in the eye which had been treated with injections. Following up this lead, Deschamps proceeded to experiment upon astigmatics with the view of causing flattening of the over-curved meridian. Four cases have been treated in this way with encouraging results. After 18 months two of the cases show a change of refraction of 2D. Full details are not given. Indeed, the author expressly states that he publishes his present observations only in order to draw attention to the matter. ERNEST THOMSON.

(2) **Maddox**, in a case of moderate myopia, disqualifying for Woolwich, devised certain operations for the purpose of flattening first one meridian of the cornea and then another at right angles to the first. The following is the method he adopted: he dissected up a flap of conjunctiva in the traverse meridian of the eye, and passed a keratome between the conjunctiva and the sclera into the anterior chamber of the eye. The incision was enlarged above and below with a probe-pointed knife, in order to extend it as much as possible. The second operation, a much simpler affair, was performed 46 days after the first. A large incision was simply made at the lower margin of the cornea with an ordinary cataract knife.

IV. DISLOCATION OF THE LACRYMAL GLAND.

Scrini.—On mobile orbital lacrymal glands. (Des glandes lacrymales orbitaires mobiles.) *Archives d'ophtalmologie*, octobre, 1905.

To the six existing cases of non-traumatic dislocation of the orbital lacrymal gland, Scrini adds a seventh,* the main facts of which follow :—

A man, 44 years of age, developed suddenly and without other symptoms a localised swelling in each upper lid. He had suffered from gonorrhœa six months previously, and two months before the affection of the eyelids was noticed, had fallen from a height of four mètres upon his buttocks. Upon examination, the outer third of the orbito-palpebral groove of each upper lid was effaced by a fold of skin running obliquely from above downwards and from within outwards. The skin presented normal characters. On palpation, the pouch was found to contain a hard, nodular, mobile body, of about the size of a small almond. It was freely movable from side to side, could be reduced temporarily, and was connected with the orbit by a pedicle. No pain or lacrymation. When seen a year after the first examination, the displaced glands had disappeared.



Taking the above case as his text, Scrini discusses many points connected with this singular and rare condition of the lacrymal gland. It may be met with at any age, is more frequent in men than in women, and is generally unilateral. The appearances of the condition are excellently shown in the accompanying illustration, borrowed from a paper by Golovine (*Archives d'ophtalmologie*, 1896, p. 104). The condition is generally discovered by chance. As etiological factors, cough, epilepsy, and violent emotions have been mentioned. Anatomical peculiarities also, may play a part in the production of the luxation, as may augmentation in the volume and weight of the gland. In Scrini's case it is probable that actual dislocation was preceded by chronic inflammation of gonorrhœal origin. S. S.

*Scrini, furthermore, gives brief particulars of an eighth case, under the care of Dr. Joseph, where a man of 40 years suffered from bilateral dislocation of the lacrymal glands.

V. ELECTRICITY AND CATARACT.

Desbrières and Bargy.—A case of cataract due to a discharge of industrial electricity. (*Un cas de cataracte due à une décharge électrique industrielle.*) *Annales d'oculistique*, T. CXXXIII, p. 118, février, 1905.

Desbrières and Bargy record the case of a man who received a shock from an alternating electric current of 20,000 volts and 30 periods. He was unconscious for half an hour, had severe burns on the right side of his body, especially the arm and face, and for the first few days after the accident could not see anything at all with the right eye, owing either to actual loss of sight or to œdema of the lids, which was so intense as to prevent an examination of the eyes. A fortnight after the accident, when the œdema had subsided, the vision of the right eye was 8/10, but objects looked as if seen through a mist; the fundus was normal; but there were numerous punctiform and linear opacities in the lens, spread all over its surface, but thickest at the equator. Eighteen months later, the condition of the eye was unaltered. The possible explanation of the condition as due to chemical alteration, destructive action of the current, circulatory disturbances in the anterior segment of the eye, or traumatic influence of the current, the prognosis, and the treatment are discussed.

R. J. COULTER.

VI. SPASMUS NUTANS.

- (1) **Buchanan, Mary.**—Two cases of spasmus nutans. *Annals of Ophthalmology*, July, 1905.
- (2) **Schapringer, A.**—On the pathogeny of spasmus nutans. (*Zur pathogenese des Spasmus nutans.*) *Centralblatt für prak. Augenheilkunde*, August, 1905.

(1) **Mary Buchanan** reports two cases of spasmus nutans and nystagmus in infants, aged 6 and 7 months respectively, each of whom had 4 D. of myopia. She assigns this curious affection to efforts made by the infant to obtain binocular vision, rendered more difficult than usual by some factor or factors that would probably be identified, she thinks, if every case was examined at the outset by an ophthalmologist.

(2) **Schapringer** discusses the origin of the spasmodic movements of the head accompanied by uni- or bilateral nystagmus in infants. He agrees with Raudnitz in thinking that the main cause is keeping children in comparatively dark rooms in which

there are one or more spots of bright light. The infants naturally fix this spot, even if they have to get into uncomfortable attitudes to do so. Raudnitz is of opinion that the fatigue thus brought about is the primary cause of the head movements and, later, of the oscillatory movements of the eye or eyes (binocular vision not being established in infants). Schapring, on the other hand, is of opinion that fatigue has nothing to do with it, but bases his theory upon the well-known physiological fact of the exhaustion of the retina. Fixation of a bright point rapidly exhausts the corresponding part of the retina, and if the stationary object is still to be seen in all its brightness, it must be fixed by different parts of the retina very frequently, and thus nystagmus is brought about, and, later, spasmodic movements of the head. The condition practically always disappears if the child be kept permanently in well-lit rooms. A. LEVY.

VII. DISEASES AND MALFORMATIONS OF THE CORNEA.

- (1) Stasinski.—A case of neuromyolytic keratitis caused by a periostitis of the upper jaw, with fatal termination. (Ein Fall von Keratitis neuromyolytica auf Grund einer Periostitis des Oberkiefers mit tödlichen Ausgang.) *Zeitsch. für Augenh.*, Mai, 1904.
- (2) Oeller.—Upon acquired pigmentary spots of the posterior wall of the cornea. (Ueber erworbene Pigmentflecke der hinteren Hornhautwand.) *Arch. f. Augenheilk.*, 1903 p. 293.
- (3) Zur Nedden.—A case of congenital melanosis corneæ in conjunction with a pigmented reticulation in the anterior chamber, and on the iris. (Ein Fall von angeborener Melanosis Corneæ in Verbindung mit einem Pigmentnetz in der vorderen Kammer und auf der Iris.) *Klin. Monatsbl. f. Augenheilk.*, 1903, II, p. 342.
- (4) Donaldson, E.—Alveolar sarcoma of the cornea. *Trans. Ophthalmological Society*, Vol. XXIII, 1903.
- (5) Ziegler, S. Lewis.—Corneal ulceration due to nasal infection. *American Medicine*, 9th April, 1904.
- (6) Velhagen.—On primary striped disturbance of the cornea. (Ueber die primaere bandformige Hornhauttrübung.) *Klin. Monats. f. Augenheilkunde*, 1904, p. 428.

- (7) Dor, Louis.—Bilateral keratoconus in the course of Basedow's disease, treated on the one side by the actual cautery, disappearing on the other side after treatment with thymus gland directed towards the cure of the Basedow's disease. (Kératocône bilatéral au cours d'une maladie de Basedow, traite d'un côté par la cautérisation ignée et ayant disparu de l'autre côté, par le traitement institué contre la maladie de Basedow, l'opothérapie thymique.) *Revue générale d'ophtalmologie*, juin, 1904.
- (8) Jacqueau, A.—Sclerosis of the corneæ in a young subject. (Sclérose des cornées chez un jeune sujet.) *Bull. et Mém. de la Soc. française d'Ophthal.*, 1904, p. 264. and *La Clinique Ophthal.*, 25 juillet, 1904.
- (9) Burnett, Swan M.—Appearances simulating optic neuritis due to unsuspected irregular corneal astigmatia. *American Journ. of Ophthalmogy*, August, 1904.
- (10) Richter, P. V.—A case of hæmorrhagic infiltration of the cornea. (Kasuistischer Beitrag zur Frage der Hornhautdurchblutung.) *Die Ophthalmologische Klinik*, 20 August, 1904.
- (11) Lamb, Robert S.—Interstitial keratitis. *Journ. of Eye, Ear, and Throat Diseases*, Sept.-Oct., 1904.
- (12) Doyne, Robert W.—A case of ill-developed corneæ. *Trans. Ophthal. Society*, Vol. XXIV (1904), p. 40.
- (13) Collins, E. Treacher.—An unusual superficial circumferential opacity of the cornea, symmetrical in the two eyes. *Trans. Ophthl. Society*, Vol. XXIV (1904), p. 45.
- (14) Rochat, G. F.—Diplo-bacilli in ulcus serpens. (Diplobacillen bij ulcus serpens.) *Ned. Tijdschrift v. Geneeskunde*, 1904, II, p. 718.
- (15) Jocqs, R.—Punctate keratitis. (La kératite ponctuée. *La Clinique ophtalmologique*, 10 décembre, 1904.
- (16) Lans, J. L.—Bilateral central fistula of the cornea. (Dubbelzijdige centrale fistel der Cornea.) *Ned. Tijdschrift voor Geneeskunde*, 1904, No. 12.
- (17) Cosmettatos.—Papilloma of the bulbar conjunctiva invading the cornea. (Papillome de la conjonctive bulbaire ayant envahi la cornée.) *Ann. d'oculistique*, T. CXXXIII, p. 38, janvier, 1905.
- (18) Spicer, W. T. Holmes.—Keratitis profunda. *Ophthalmic Review*, January, 1905.

- (19) Wickerkiewicz.—Some considerations upon primary keratoconus. (Quelques considérations sur le kératocône primaire.) *Archives d'ophtalmologie*,* février, 1905.
- (20) Hirschberg, J., and Ginsberg, S.—A rare case of corneal tumour. (Ein seltener Fall von Hornhautgeschwulst.) *Centralbl. für prak. Augenheilkunde*, Februar, 1905.
- (21) Vinsonneau, C.—Syphilitic gummata of the cornea. (Gommes syphilitiques de la cornée.) *Archives d'ophtalmologie*, février, 1905.
- (22) Jocsq, R.—On keratitis punctata. *Die Ophthalmologische Klinik*, 20 Februar, 1905.
- (23) Lauber, Hans.—Upon peripheral ectasia of the cornea. (Ueber periphere Hornhautektasie.) *Klin. Monatsbl. f. Augenheilkunde*, März, 1905.
- (24) Paul, L.—On ulceration of the cornea due to diplobacilli. (Ueber Hornhautulcerationen durch Diplobazillen.) *Klinische Monatsblätter für Augenheilkunde*, 1905, XLIII.
- (25) Dimmer, F.—A curious persistent change in the cornea after a parenchymatous keratitis. (Eine besondere Art persistierender Hornhautveränderung (Faltenbildung) nach Keratitis parenchymatosa.) *Zeitschrift für Augenheilkunde*, Band. XIII., Ergänzungsheft, 1905.
- (26) Dimmer, F.—A form of corneal inflammation resembling keratitis nummularis. (Ueber eine der Keratitis nummularis nahestehende Hornhautentzündung.) *Zeitschrift für Augenheilkunde*, Band XIII, Ergänzungsheft, 1905.
- (27) Wehrli, E.—Nodular opacities of the cornea (Grœnouw) as a primary, isolated, chronic tuberculosis of the anterior layers of the cornea.—(Lupus corneæ, die knötchenförmige Hornhauttrübung eine primäre, isolierte, chronische, tuberkulöse Erkrankung der vorderen Schichten der Cornea.) *Zeitschrift für Augenheilkunde*, April, Mai, und Juni, 1905.
- (28) Consiglio, Antonio.—Long interval between parenchymatous keratitis of the right and left eye. (Langes Intervall zwischen der Keratitis parenchymatosa des rechten und linken Auges.) *Beiträge z. Augenheilkunde*, Mai, 1905.
- (29) Campbell, Kenneth.—Acute interstitial keratitis brought on by an injury. *Medical Press and Circular*, 17th May, 1905.
- (30) Posey, W. Campbell.—Keratitis disciformis, with the report of a case. *Ophthalmic Review*, May, 1905.
- (31) Terson, A.—Gummata of the cornea. (Les gommes de la cornée.) *Archives d'ophtalmologie*, mai, 1905.

*Wickerkiewicz.—Remarks on primary keratoconus. (Einiges ueber den primären Hornhautkegel.) *Zeitschrift für Augenheilkunde*, February, 1905.

(1) **Stasinski** reports the case of a man, aged 45 years, who came to him complaining of some pain and watering of the left eye, with impaired near vision. The trouble had begun about ten days previously, simultaneously with a severe toothache. The left eye, V. = $\frac{7}{8}$, showed slight episcleral injection, anterior chamber somewhat shallow, pupillary reaction sluggish, media clear, tension somewhat raised. The skin supplied by the first and second branches of the trifacial nerve was tender. In the mouth there were a few carious roots, and considerable swelling of the gums on the left side. The diagnosis (subsequently confirmed by Professors Wernicke and Uhthoff, in Breslau) was that of a peripheral ascending inflammation of the fifth nerve, following periostitis of the upper jaw. The patient refused to remain in the hospital, and came up once in ten days. At his next visit a typical *ulcus serpens* with hypopyon had formed, and a peculiar thickening of the episcleral tissue was found to surround the cornea. This may be looked upon as analogous to the thickenings of the skin found in trifacial affections. At each subsequent visit, patient was found to be worse, and, finally, in about two months from the outset, the author was informed of his death. The diagnosis must have been the correct one, the inflammation travelling up the nerve trunk and finally attacking the base of the brain. The primary increase of tension has been frequently noticed in trifacial affections; interesting also is the ring-like thickening of the episcleral tissue. A. LEVY.

(2) **Oeller** has thrice seen pigment spots develop on the membrane of Descemet after intra-ocular operations, and he regards them as pigmented epithelium of the iris, detached by the operation, and adherent to the posterior surface of the cornea.

(3) A patient, of 57 years, complained that for two years his sight had been diminishing in clearness. Examination showed the presence of iridodonesis, cataracta corticalis, and in the anterior chamber a black cobweb-like foreign body, which was connected with numerous little lumps of pigment in the posterior part of the corneal layers. **Zur Nedden** explains the case by supposing a disturbance during embryonic life in the severance of connection between iris and cornea. A. BIRCH-HIRSCHFELD.

(4) **Donaldson** removed an alveolar sarcoma of the cornea in the year 1895 (see *Trans. Ophth. Society*, Vol. XV, p. 90). There was a slight recurrence of the growth four months later, but since then the eye appears to have remained free from the disease.

(5) **Ziegler** considers that fully ninety per cent. of corneal lesions take their origin directly from pre-existent pathologic processes and secretions in the intranasal tissues. He regards the vestibular air spaces as the main receptacles and breeding grounds for the inspired organisms, and, in particular, the maxillary sinus, the special importance and influence of which he discusses in detail. Disease, he says, may be transmitted from the eye to the nose by the nasal duct, by blood and lymph streams, and by reflex action. The first of these paths of disturbance is discussed. Treatment is considered in detail.

FRANK W. MARLOW.

(6) **Velhagen** observed in two brothers a central band of discolouration in the cornea of both eyes. Microscopical inspection showed in Bowman's membrane granules deeply coloured with hæmatoxylin or carmine. The granules consisted of chalk, apparently in conjunction with some organic substance. Velhagen considers Leber's explanation to be the correct one, namely, that the chalky deposit was left in the cornea by evaporation of the nutrient fluid, which was abnormally charged with calcareous salts.

A. BIRCH-HIRSCHFELD.

(7) A female patient, 24 years old, consulted **Dor** on account of failing vision accompanying Basedow's disease, for which latter she had been treated by various drugs. Dor found that, apart from the usual eye signs of the disease, she also had keratoconus on both sides, that on the left side complicated by a leucoma at its summit. R. V. $\frac{1}{8}$; L. $\frac{1}{20}$. The left conus was treated by the actual cautery, and then, with a view to the cure of the general disease, the patient was ordered to take every day 100 grammes of raw calf sweetbread mixed with sugar and flour. This treatment was successful to a most unexpected degree, for not only did the symptoms of the general disease abate, but the keratoconus on both sides, operated and non-operated, entirely disappeared so that R. V. = 1, and L. = $\frac{1}{3}$ (on account of the leucoma). The writer leaves the cause of this remarkable cure open for discussion.

ERNEST THOMSON.

(8) A tuberculous girl, 20 years of age, had been subject for sixteen years to slight and transitory attacks of ocular inflammation. Upon examination, **Jacqueau** found a peculiar symmetrical appearance of the corneæ, which presented opaque white circles, having a mother-of-pearl-like sheen, and tending towards a concentric arrangement. The epithelium was intact. Conjunctiva normal. R.V. = $\frac{2}{3}$; L.V. = $\frac{5}{8}$. Local treatment altogether or almost useless. The inflammatory symptoms (never well-marked) disappeared speedily when the patient resided at villages 600 to

800 metres above sea-level. The curious corneal changes—characterised as “sclerosis” by the author—remained without appreciable change during the four years the girl was under Jacqueau’s observation. S. S.

(9) An ophthalmic surgeon had treated a young lady for optic neuritis of one eye, but without tangible result. When the patient was seen by **Burnett**, the sight of the affected eye was 5/15, and there was marked blurring of the retinal vessels near the upper and inner edge of the disc. By ordinary methods of examination, no opacity could be detected in either lens or cornea. An investigation by the ophthalmometer, however, at once revealed the character of the trouble. Systematic measurement of the corneal curvature showed that the latter became suddenly more flattened to the nasal side of the centre. In fact, it dropped from 27 at the visual axis to 24 within the first 5, to 21 at 10, to 19 at 20, and to 16 at 20, a total of 11 D. No glass was of service, but with a stenopaic hole, vision rose at once to 5/6.

(10) A baby suffering from general cyanosis (due to congenital heart disease) and from ophthalmia neonatorum, was seen by **Richter** four days after birth. The left cornea then presented the aspect of hæmorrhagic infiltration. The bronze-colour changed from the eighth day into a yellowish-green. The author hints at the possibility of an intra-uterine injury or a connection with the general cyanosis. C. MARKUS.

(12) **Doyne’s** patient, a child of 4 years, showed remarkably flat corneæ, with a faint greyish arcus above and below, extending into the cornea for 2 mm. or 2.5 mm. There was a considerable amount of hypermetropia, with a little astigmatism. No evidence whatever of inherited syphilis.

(13) **Collins’s** case occurred in a healthy-looking man, 21 years of age, who showed no signs of hereditary syphilis, either in his physiognomy or teeth. He had been subject for many years to transient attacks of inflammation of the eyes. On examination, Collins found a superficial, greyish, mottled opacity involving the circumference of each cornea, leaving only an oval area of the cornea, a little below the centre, clear and unaffected. No blood vessels were to be recognised in the cornea. The sight was almost normal.

(14) In some cases of serpent ulcer of the cornea with hypopyon, bacilli were observed closely resembling *Morax-Axenfeld’s* diplo-bacilli, but differing from these in their behaviour on culture-media. Thus, they grew abundantly on common agar and gelatine, liquefying the latter, in this respect resembling the “*bacillus liquefaciens*” found by Petit and

Axenfeld in corneal ulcers. Blood serum was liquefied little or not at all, whereas it ought to be by a true *Petit bacillus*. **Rochat** thinks his bacteria a variety of the *bacillus liquefaciens*. The ulcers in which they were found were remarkably free from pain.

G. F. ROCHAT.

(15) The principal object of this article by **Jocqs** seems to be to show that all forms of so-called punctate keratitis are not dependent upon disease of the uveal tract, but that certain of them are unassociated with any iritis. In these the spots are round, large, and situated in the corneal substance, even towards its anterior surface. The progress may be rapid under local treatment, and the prognosis is favourable.

ERNEST THOMSON.

(16) At the winter meeting of the Dutch Ophthalmological Society **Lans** demonstrated a lady, 44 years old, presenting a corneal cicatrix and anterior synechia on both eyes, as the result of an eye disease contracted, according to the patient herself, after vaccination with human lymph when 2½ years old. She came to consult **Lans** for a feeling as of a foreign body in her right eye, and on examination, a small prominent vesicle was observed in the centre of the corneal cicatrix; the tension was a little higher than normal. After puncturing this vesicle with a cataract knife, there escaped a small quantity of clear fluid, although the anterior chamber did not become very shallow. After tight bandaging, the eye became normal again in a few days, but a small drop of clear fluid could be seen filtering through the fistula every now and then. In the left cornea a similar vesicle was occasionally observed, disappearing after massage and bandaging. The case was one of bilateral fistula. So long as the fistulæ allowed a small quantity of fluid to escape, the eyes caused no discomfort, but every time the tiny opening was closed, the tension rose and a vesicle formed. After puncturing the latter, the normal condition was restored.

The patient, as mentioned above, attributed her disease to inflammation of the eyes following vaccination with human lymph. If there really exists a connexion, what can the original disease have been? First, it may have been a direct infection of the cornea with the virus. An instance of the result of direct infection was recorded by Critchett in 1876, in the person of a surgeon who wounded his own eye with the lancet while performing vaccination, thereby contracting a very severe purulent keratitis. Secondly, the keratitis may have been consecutive to a post-vaccinal conjunctivitis. In this case the keratitis, according to Groenouw, can appear under two distinct forms, being either an ordinary infiltration or ulcer,

situated near the limbus, and healing without much opacity, or a deep keratitis, situated in the centre of the cornea and leaving a dense central macula. Lans thinks the latter form to have been present in his case. The frequency of infection of the eyes by the virus of smallpox has been most favourably influenced by obligatory vaccination. Cohn recorded at the Blind Congress in Breslau in 1901, that before vaccination was made obligatory in Prussia in 1874, 35 per cent. of the blind had lost their eyesight by smallpox. In 1874, in the institutes for blind, only 1 per cent. occurred; and now-a-days the disease is so rare that the reports of German eye clinics have no column for diseases caused by smallpox. G. F. ROCHAT.

(17) **Cosmettatos** describes the conditions found in an eye removed on account of a tumour, which started from a papilloma which developed on the site of an old conjunctival wound near the limbus, and after spreading over the entire cornea, began to take on a malignant character. Microscopically, the tumour occupied the anterior part of the cornea, penetrating in the centre almost to Descemet's membrane. It consisted of connective tissue, vessels, and epithelium. The arrangement of the epithelium in places resembled that seen in epithelioma, but from the presence of vessels throughout a large part of the tumour, either in direct contact with the epithelium or associated with connective tissue, Cosmettatos concludes that the neoplasm was a papilloma tending to undergo epitheliomatous degeneration.

(18) After pointing out that many cases of interstitial keratitis are met with in which no trace of syphilis is observed, **Spicer** has collected 54 cases in which this disease stands out as a distinct clinical entity. Of these 34 occurred in males and 20 in females. The average age of these patients was 40, the oldest being 65 years. Nearly all these patients took alcohol, and many of them took it to excess. Over-eating was clearly present in some cases, and often this was combined with excessive drinking—chiefly of beer. Nine had gout, 7 others rheumatism, and 1 sciatica. Digestive trouble and constipation were present in 7 cases. Carious teeth and pyorrhœa alveolaris were found in 4 cases, and 4 others occurred just before or after the termination of pregnancy. A small number were in perfect health and were abstemious and regular in habits, but had a strong family history of gout. In seven cases the disease seemed to have been started by injury. The average length of the disease was 3 months, and varied from 3 weeks to 12 months. One eye only was affected 27 times, and both eyes 5 times.

Opacification of the cornea either takes the form of a central disc or else of a peripheral cone. In 34 cases "striated keratitis"

was present in the early stages, but this very soon disappears, or is hidden by the increasing opacity of the cornea. Œdema of the cornea is nearly always present, and sometimes small bullæ. Fluorescein stains the deeper affected layers at certain stages of the disease, and the endothelium may continue to stain for a long period. Iritis was present in 14 and absent in 34 cases, and the tension was raised in 4 cases. No changes were seen in the fundus, except in one case, where widespread retinal phlebitis appeared after prolonged diarrhœa.

Œdema of the cornea is a marked feature and to this is due the striate keratitis above-mentioned. The deepest fluorescein stained part is due to the shedding of the endothelial cells of Descemet's membrane, which leaves the surface denuded of cells; this allows the aqueous to infiltrate the deeper layers and thus staining is produced.

It having been proved by Wagenmann, Koster, von Hippel, and others that interference with the blood supply of the ciliary region can experimentally produce parenchymatous keratitis, it is more than likely that the true seat of the disease is an affection of the nutrient blood vessels and that the different forms assumed by the disease are dependent upon the particular vessels affected.

As to treatment, hot fomentations and atropine are the most useful, unless increase of tension precludes use of the latter. Subconjunctival injections of cyanide of mercury or normal saline produce irritation and do no good; dionine has not proved particularly beneficial. Strict dieting and the treatment of any general condition are of use. Some patients do well with regular doses of mercury, although most of them do equally well without it.

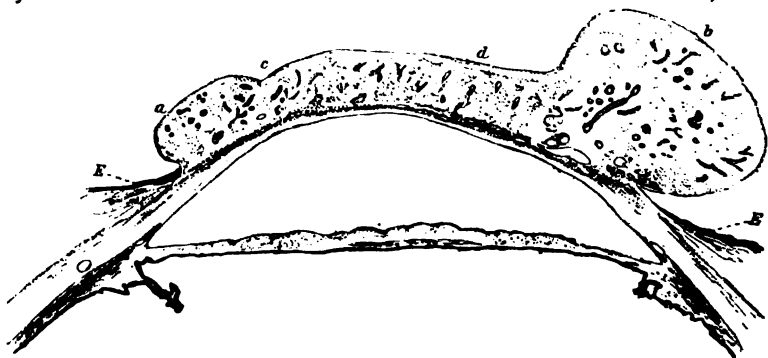
C. D. M.

(19) **Wickerkiewicz's** article deals with certain aspects of that curious affection, Conical Cornea, first clearly described in the year 1748 by Mauchart, of Tübingen, under the name of "staphyloma diaphanum." The condition is usually attributed to diminution in the resistance of the cornea, due to defective innervation, to increased tension, or to feebleness of resistance. The author believes that in conical cornea there is a slight though sensible increase in the intra-ocular tension, and that this, together with a local predisposition connected with nutritional disturbance, brings the condition about. He puts on one side the influence of inflammation (Stellwag) and of endothelial lesions (Panas). With regard to the rhythmical variation in the size of images now and then met with in keratoconus, Wickerkiewicz has found, by examination with the Javal ophthalmometer, that it depends upon rhythmical changes in the shape of the apex of the cone. The phenomenon may be unilateral or

bilateral. He explains the pulsation, after Wagenmann (*Archiv f. Ophthalm.*, 44, p. 426), on the analogy of that produced if an aperture leads into a cavity the walls of which contain vascular tissues or fluid, conditions exactly reproduced by an eye with keratoconus. That the appearance is not invariably present is connected with the fact that the cone is often not thin enough to permit of its production. Diagnosis, even of commencing conicity, can be made by skiascopy. With regard to treatment, Wickerkiewicz prefers cauterisation without perforation, whenever the latter can be avoided. He speaks favourably of Elschnig's modification (*Wiener Klin. Rundschau*, 15 Mai, 1904*). The author concludes an interesting communication with details of six cases of conical cornea, each of which offers some peculiarity as regards either etiology or progress. S. S.

(20) **Hirschberg** reports a case of a girl, *æt.* 9 years, who had marked evidences of tuberculosis, in the shape of ankle joint disease and angular curvature of the spine. This patient had suffered for two months from a severe inflammation of the left eye, which, on examination under an anæsthetic, was found to present a tumour, resembling granulation tissue, covering the whole of the anterior parts of the eye, and hanging down over the conjunctiva. A diagnosis of perforating tuberculosis of the iris was made, and the eye consequently enucleated.

Ginsberg, who examined the eye microscopically, found the deeper parts of the eye, including the iris and anterior chamber, quite normal; Descemet's membrane was intact. The deeper layers of the cornea were infiltrated with small round cells, and



its superficial layers much broken up and in part replaced by this tumour (*see fig.*), which resembled young granulation tissue, and contained many plasma and mast cells. The tumour might be regarded as a very much exaggerated pannus. A. LEVY.

* For abstract see *THE OPHTHALMOSCOPE*, August, 1904, p. 341.

(21) After mentioning instances of gummata of the cornea published by Magni (1864), Galezowski (1878), Denarié (1882), Lang (1886), and Peters (1898), **Vinsonneau** describes the following case:— a married woman, aged 50 years, has suffered from a gumma of the palate, and a specific paralysis of the right external rectus muscle several years before she fell under the author's notice. There had been one miscarriage. When examined by Vinsonneau, the right cornea was cloudy, except as regards the upper fourth, through which a portion of the iris could be recognised. There were two superficial ulcerations in the cloudy part of the cornea. At the central part of each ulceration lay a clearly-defined figure, of dirty-grey colour, resembling in shape a large comma, and situated in the substance of the cornea. Vision equalled perception of light with the affected eye. The diagnosis was made of interstitial keratitis and gummata of the cornea. A gumma of the septum, at the level of the middle meatus, was found in the right nasal fossa. Considerable improvement followed local and general treatment, the latter comprising two series of intramuscular injections of sublimate oil, such as is employed at the Hôtel-Dieu, in Paris, by de Lapersonne. S. S.

(22) The name keratitis punctata has been applied by different authors to different conditions. Apart from the well-known deposits on Descemet's membrane in cyclitis, there is a kind of interstitial keratitis described by Mauthner and a peculiar form of keratitis made known through Fuchs which go under the same heading. **Jocqs** reports one case of the former and two of the latter description. In a girl, ten years old, numerous yellow-grey irregular specks made their appearance in some part of the cornea, occupying its whole thickness and accompanied by iritis. Although there was no history or sign of congenital syphilis, mercurial inunction was resorted to, and a cure effected after three months' treatment. In the following two cases of Fuchs's keratitis punctata, which occurred in young male patients, syphilis was more or less evident as the causal agent. The affection is characterised by a rapid onset with photophobia, absence of iritis, and the appearance of a definite number of dots in the anterior layers of the corneal substance. The duration is relatively short (a month or so). The prognosis, therefore, is good. C. MARKUS.

(23) **Lauber** describes three rare cases of marginal ectasia of the cornea, which, according to his views, differ in several respects from the disease observed by Fuchs (*Archiv f. Ophth.*, LII, 1901, p. 317) and by Terrien (*Archives d'ophthal.*, XX, 1900). Lauber's cases were of chronic inflammatory origin. Material details follow:—(1) A woman, *ætat* 61 years, had remarked for

some years failure of sight in her left eye. The upper marginal part of the left cornea manifested a semi-lunar, opaque, greyish-white arc, separated by a sharp, irregular line from the rest of the cornea, which had a normal appearance. The affected part took the form of a shallow groove, the central part of which was ectatic but quite transparent. Very fine surface vessels covered the affected part. 7 D. of astigmatism. V.=almost 0.1—6 D. cyl. axis $20^{\circ}=0.4$. (2) A man, aged 66 years, showed as regards his left eye a finding similar to that described above. The attenuated marginal portion of the cornea lay above and somewhat towards the nasal side, and was bounded below by a sharp line. Surface vascularisation. Astigmatism, 13 D. V.+1.0 D. sph. with +12 D. cyl. axis $65^{\circ}=0.6$. (3) A man, *ætat* 74 years, had both eyes affected with this peculiar disease. There was slight ectropion of each lower lid, and a markedly hyperæmic conjunctiva. Pterygium. Slight mucous discharge. The upper marginal part of each cornea, embracing almost the entire upper half of the cornea, was ectatic, and although traversed by fine superficial vessels, yet retained its transparency. R.V.=2/30 $\frac{30 \text{ sph.}}{120 \text{ cyl.}}$ 40'—6/30. L.V.=3/30, not improved by glasses. S. S.

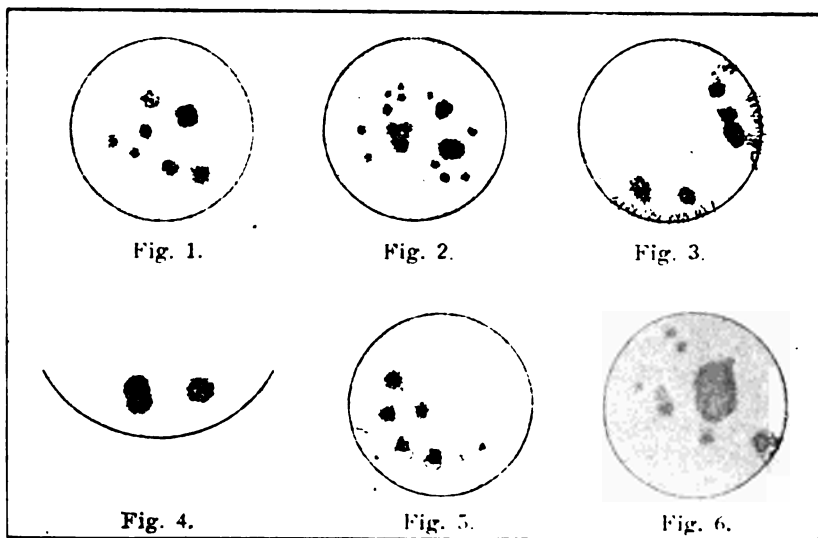
(24) There are quite a number of observations which tend to show that diplobacillary conjunctivitis, although usually a slight affection, may be complicated by corneal ulcers. Paul describes 26 cases of this kind in which the ulcers were even of a serious type. The distinctive features of these ulcers consisted in their central situation, an evenly grey or purulent infiltration of the base, the round disc-like shape and the presence of hypopyon and iritis; the size varied from 2 mm. to 5 mm. in diameter. A supervening injury was in many instances the immediate cause of the ulcers. The treatment which Paul found most efficacious, consisted in repeated irrigation with $\frac{1}{2}\%$ to 1% solution of zinc sulphate, in conjunction with the usual applications in cases of corneal ulceration. By these means favourable results were, as a rule, attained, although healing was often protracted.

C. MARKUS.

(25) Dimmer describes the case of a man who had several attacks of parenchymatous keratitis, and in whom, several years afterwards, besides the remains of a few vessels, certain grayish markings could be seen in the cornea. These markings took the form of fine concentric doubly-contoured lines of semi-circular shape and running more or less parallel to the corneal margin; they were limited to the lower half of the cornea; and the remains of the blood vessels were in front of them. These markings were situated in the deepest layers of the cornea. They are taken by Dimmer to be the effect of folds or wrinkles in the posterior

layers brought about in this case probably by the cornea having swollen during the attack of inflammation and having fallen into folds when returning to its normal condition. A. LEVY.

(26) **Dimmer** discusses the forms of keratitis described by Fuchs as "*keratitis punctata superficialis*"; by Adler and v. Reuss as "*keratitis maculosa*"; and by Stellwag as "*keratitis nummularis*." These various forms of keratitis have certain well-marked points of difference, and may be regarded as distinct diseases. To them Dimmer now adds a fourth, having certain resemblances to Stellwag's "*keratitis nummularis*," but also certain points of difference. Thus, there is less conjunctival disturbance than in Stellwag's cases, and the course, which in Stellwag's cases is a rapid one, is very much longer, little change



being observed in the course of many weeks' observation. Dimmer's form is that of an infection of the deeper layers of the cornea, in which ulceration is a secondary manifestation occurring late in the disease. Dimmer's drawings are here reproduced. Figs. 1 and 2 represent the right and the left cornea respectively of his first patient, a man aged 63 years. Both conjunctivæ were reddened, but there was no ciliary injection. The infiltrations were small, round spots, 1 mm. to 1.5 mm. in diameter. They had sharp margins of a grey colour, presenting in the centre a small dot or spot of lighter colour. In others, where this spot is not present, the centre is almost transparent. The cornea over them showed fine linear opacities, and a very slight

surface depression. The left cornea of this patient was in a similar condition, except that the infiltrations were larger and showed a tendency to confluence. Fig. 3 (with a magnified view in Fig. 4), represents the right cornea of a boy, *ætat* 14 years. The condition came on in the course of three weeks. Here the spots have evidently become confluent, and a few fine vessels are seen. The cornea over them is raised, and in one or two places the epithelium is absent. In the course of a few days, however, these prominences altered into the excavations mentioned above, and the epithelium was regenerated. Three weeks' treatment succeeded in clearing up the condition but slightly.

Fig. 5 represents the right cornea of a man, *ætat* 28 years, whose eye had been injured a month previously by a splash of vinegar. The spots in this case, on careful examination, can be made out to consist of a large number of very fine dots. The cornea over them is raised, with some loss of epithelium. These infiltrations are all in the anterior and middle layers of the cornea. Treatment cleared up the condition but slightly.

Fig. 6 represents the right cornea of a man of 27 years, who three months before got some lime into his eye, an accident, however, from which he recovered perfectly. This cornea has a large number of these infiltrations, some manifestly arising out of the confluence of two or more smaller ones. The largest measures 4 mm. by 3 mm. The larger ones show the denser margin and clearer centre previously noticed, the whole being made up of closely aggregated dots. The condition remained without change in spite of three months' treatment.

Dimmer's cases form, it is obvious, an interesting group, and although none of them has been followed to an end, still their publication is of value, as drawing attention to this curious form of corneal affection.

A. LEVY.

(27) **Wehrli** describes two cases in brothers of this interesting affection. He transplanted bits of the nodules into the anterior chamber of guinea pigs, with negative result. Other bits he examined microscopically for tubercle bacilli, and in one section came across two curved vacuolated rods stained red by Ziehl-Nielsen stain, and therefore taken to be tubercle bacilli. He regards the process as analagous to lupus of the skin. He points out the resemblances between these two maladies. A. LEVY.

(28) In **Consiglio's** case an interval of 26 years elapsed between the onset of parenchymatous keratitis in the two eyes. The evidence of hereditary syphilis as the cause of the corneal inflammation, however, is not altogether conclusive. S. S.

(29) **Campbell's** patient, a man, aged 26 years, who exhibited pronounced evidences of hereditary syphilis, was struck in one eye by a flying spark, and a few days later developed typical

interstitial keratitis in the injured eye. The other eye, which had not been injured in any way, became involved about a fortnight later.

(30) **Posey's** patient was a Polish mine labourer, who complained of defective sight. Six months previously the left eye had been struck with a piece of coal, and it had remained inflamed for some time in spite of treatment. About a month after the injury, the right eye also became inflamed; the inflammation was never very severe, but there was considerable disturbance of vision. The pupillary area of both was the seat of grayish-white opacities of a somewhat oval form; the epithelium over the opacity was roughened but unbroken; the opacities extended posteriorly into the *substantia propria* and resolved themselves into a number of grayish clots; the centre of the opacity was rather denser than the surrounding area. There was no trace of irritation. Subconjunctival saline injections were tried, together with local applications of a 5% solution of iodine and yellow ointment, but the patient eloped from the hospital after two weeks, and was not again seen, so that it is impossible to know whether treatment was of any avail. The literature of this rare disease is given, and, as regards treatment, Fuchs found that atropine, hot compresses, sublimate injections, paracentesis of the anterior chamber, the application of absolute alcohol, etc., were all powerless. The galvano-cautery seems to have cut some cases short, but it entails a scar. Massage should not be used too soon, on account of its liability to excite further irritation.

C. D. M.

(31) **Terson** considers it as proved that gummata of the cornea may occur in syphilis, hereditary or acquired, and that such lesions may be cured, without ulceration, by intensive mercurial treatment, especially by injections of calomel. He describes the following case.—A young woman had suffered from unilateral interstitial keratitis, which was cured in three months. The family and personal evidences of hereditary syphilis were conclusive. Four years after the attack of keratitis, the patient, then aged 22 years, presented a relapse accompanied by violent inflammation of the iris. The limbus and the neighbouring sclera at the lower part of the eye were infiltrated and somewhat swollen, as if the irido-corneal angle were involved. Matters improved for a time under intramuscular injections of mercurial oil, but after twenty injections of the kind had been made, there was a violent relapse of the ocular inflammation. The limbus again became prominent; two yellowish infiltrations appeared at the lower part of the cornea; and what Terson and others regarded as a gumma was observed in the external paracentral region of the cornea. The lesion resembled a large tear; was

clearly defined, and of yellowish colour; lay in the substance of the cornea, projecting both into the anterior chamber and externally; and eventually acquired the size of a hemp-seed. Ulceration was not present. After several injections of calomel, the gumma, although ready to disintegrate, was resorbed, leaving behind it a small opacity only. H. DE V.

VIII. ATROPHY OF THE IRIS IN TABES AND GENERAL PARALYSIS.

Dupuy-Dutemps.—On a special form of atrophy of the iris in tabes and general paralysis: its relationship to irregularity and reflex disturbances of the pupil. (*Sur une forme spéciale d'atrophie de l'iris au cours du tabes et de la paralysie général: ses rapports avec l'irrégularité et les troubles réflexes de la pupille.*) *Annales d'oculistique*, septembre, 1905.

Everybody is aware of the peculiar expression of the eyes in those suffering from tabes dorsalis or general paralysis, an appearance crystallised by Gilles de la Tourette in the brief phrase, "Œil brillant, regard atone." When analysed, this is found to be due to several factors, such as myosis, enophthalmos, narrowing of the palpebral fissure, and the absence of the reaction of the pupil to light. **Dupuy-Dutemps**, however, in the present communica-



Fig. 1.



Fig. 2.

tion, points to the most important factor of all, namely, modifications in the actual structure of the iris. The normal prominences of the anterior surface (fig. 1), which add not a little to the brilliancy of the iris, are lost to a large extent in cases presenting the Argyll Robertson pupil, so that the iris becomes flat, as it were, and practically devoid of all relief (fig. 2). The atrophic changes may involve a portion only of the iris (figs. 3 and 4). They do not go beyond a certain point, and never attain the extreme degrees observed after serious and prolonged local inflammation. It is important to note that a precisely similar appearance may be present at a certain stage

in the evolution of chronic subacute glaucoma. The atrophic changes are not connected with contraction of the pupil, so often seen in *tabes dorsalis*. They may even be pronounced in eyes, the pupil of which is large (fig. 4). On the other hand, a distinct relationship exists between the atrophic state of the iris and the deformity of the pupil, which frequently accompanies the Argyll Robertson phenomenon, and, indeed, sometimes



Fig. 3.



Fig. 4.

precedes the latter. Thus, the part of the pupillary border which corresponds to the atrophic zone is that which has the greatest radius of curvature. This point may be readily appreciated in figs. 3 and 4, where one sector of the iris is alone involved. The atrophic iris, histologically examined in a single instance, showed a simple atrophy, without signs of inflammatory reaction, involving all the tissues of the iris to an equal extent. The thickness of the stroma was reduced; while the muscular fibres of the sphincter were united into slender fasciculi, and were less numerous than normal. At certain points pigmentary accumulations were present.

The remainder of this communication is occupied with physiological considerations applied to the explanation of the changes described by Dupuy-Dutemps, but into these highly technical points we have no present intention of entering. For details, readers are referred to the original communication.

S. S.

IX. EXOPHTHALMIC GOITRE.

- (1) Bryant.—Pigmentation of the eyelids in Graves' disease. *Clinical Journal*, April 26th, 1905.
- (2) Teillais.—A new ocular symptom of Basedow's disease. (Nouveau symptôme oculaire de la maladie de Basedow.) *Archives d'ophtalmologie*, mai, 1905.

- (3) **Beaumont, W. M.**—Cases of abnormal eye conditions. *British Medical Journal*, July 8th, 1905.

(1) **Bryant** claims that for many years he has been accustomed to point to pigmentation of the skin of the eyelids as a sign of Graves' disease.

(2) **Teillais**, of Nantes, describes a new and early symptom of Basedow's disease, namely, a brownish pigmentation of the eyelids, sparing the conjunctiva, and ceasing abruptly at the circumference of the orbit.* He narrates three cases in which this abnormal pigmentation was present. The appearance is believed to be related in some way to the known excess of hæmoglobin in the blood of patients affected with exophthalmic goitre.

(3) **Beaumont** reports from the Bath Eye Infirmary cases of—1. Retinitis punctata albescens; 2. Graves's disease; and 3. Essential shrinking of the conjunctiva. The woman suffering from Graves's disease presented a brownish, symmetrical pigmentation of the upper eyelids, in addition to concentric contraction of the field of vision. The latter sign is stated by Beaumont to be not infrequent in that disorder.

REVIEWS.

Transactions of the Ophthalmological Society of the United Kingdom. Volume XXV, 1905. London: J. and A. Churchill, New Burlington Street. Price, 12/6 net.

The *Transactions* of the Ophthalmological Society for 1905 have just made their appearance, and, as usual, represent all that is best as regards the literary side of British ophthalmology. The volume contains 23 plates, numerous diagrams, and upwards of 400 pages of letter-text.

Die lokale Anästhesie in der Augenheilkunde. Von Prof. Dr. BEST, in Giessen. Halle a. S.: Verlag von Carl Marhold. 1905. **Local Anæsthesia in Eye Work.** By Professor BEST, of Giessen. Price, 1 mark 20.

Professor Best's opportune *brochure* deals with the various local anæsthetics that have been and still are used in ophthalmology. After a general discussion of the local and general effects produced by those agents, Best describes, turn by turn, cocaine, acoine, alypin, anæsthesin, chloretone, dionine, eucain β ,

* The same symptom, it appears, was described by Schroetter in 1903, and by Jellineck and Rosin in the following year. —EDITORS.

holocaine, stövain, subcutin, suprarenin, tropacocaine, and yohimbin. With respect to the latest local anæsthetic, alypin, Best states that the cornea becomes completely anæsthetic within 50 to 75 seconds after a 1% or 2% solution has been applied to the eye. The conjunctiva becomes somewhat hyperæmic, but alypin exerts no action either upon the pupil or the accommodation. The chief advantage of that costly drug, yohimbin, when used as a 0.5% to 1.0% solution, is that the resulting anæsthesia lasts for a long time. Yohimbin produces slight dilatation of the pupil. The booklet concludes with two practical sections—the one dealing with local anæsthesia in operations, and the other as a means for alleviating the pain attending certain diseases of the eye. Cocaine, as well known, mitigates such pain for a short time only, and its continued use under the circumstances is likely to be harmful. Warm applications and the letting of blood are old-fashioned but often efficacious remedies. Radium is too costly for every-day use. As to dionine (nowadays much in vogue as a local analgesic), Best recommends the employment of a 5% solution only as a last resource. It is 'not altogether clear, however, from his remarks, whether his experiments with that interesting product have gone farther than to apply it to his own eye, naturally with the production of some considerable personal discomfort.

S. S.

Colour Vision and Colour Blindness: a Practical Manual for Railroad Surgeons. By J. ELLIS JENNINGS, M.D., St. Louis, Mo., U.S.A. Second Edition. Thoroughly revised with illustrations. 132 pages, crown 8vo. F. A. Davis Company, Publishers, Philadelphia, Pa., U.S.A. Price extra cloth, \$1.00 net.

The fact that this book—one upon a special subject in ophthalmology—has passed into its second edition, is sufficient recommendation for its popularity and usefulness. Comparison with the first edition shows careful revision with the introduction of much new matter which is useful. We can heartily endorse the work in every detail; it is one that should be read by every practising ophthalmologist and placed in the hands of every corporation official whose business is to determine colour variations. We believe it to be the best practical manual upon normal and sub-normal colour perception that is now in use.

C. A. O.

The Development of the Eye. By J. T. GRADON, M.A. (Oxon.). Leeds: Storey & Co. 1905. Price 3s. 6d.

This book, from which much might be expected by its title, is intended, not for medical students, but for "students of refraction"; it is, in fact, a reprint of articles contributed by the

author to the *Dioptric Review*. Only 16 of its 40 pages are taken up by the subject-matter proper, the rest being devoted to contents, preface, and a glossary of embryological terms. An account of the process of karyokinesis is also appended; the striking irrelevancy of this topic only serves to bring into relief the lack of justification that the complication possesses for its existence. The book itself consists of a short summary of the more elementary points relating to the development of the vertebrate eye. There is hardly any of the substance that will not be found in any primer on biology, but the presentation is attractively clear and the style pleasing. From the nature of the monograph but little of the matter calls for any criticism on our part. The writer dogmatically asserts that the views at present accepted, which attribute the origin of the optic nerve to the stalk connecting the fore brain with the optic cup, are quite erroneous; he reserves all discussion of the subject for a further monograph, which we look forward to with interest. He regards the lens capsule as a cuticular membrane deposited by the epithelial cells of the lens and having nothing to do with the mesoblast. The hyaloid membrane he looks on as originating in the same mesoblast as that which forms the vitreous humour. Needless to say, these two last are much disputed topics. In conclusion, we would remark that the diagrams, which are original, are admirable, and constitute the most valuable feature of the book, which is well built throughout. ERNEST JONES.

L'Œil Artificiel. The Artificial Eye. By M. le Docteur ROBERT COULOMB; pp. 152, plates xxvii., and 23 illustrations. Paris: J. B. Baillière et Fils. 1905. Price, 10 francs.

Oculariste is a term for which in English we have no equivalent. Doctor Coulomb is *oculariste* to most of the important ophthalmic hospitals of Paris, and we judge from the present book that an *oculariste* is a maker of artificial eyes. But Dr. Coulomb is no mere artisan, although it is evident he is a very competent artist. He takes a scientific interest in the work he has to do, and the present book is the embodiment of a personal experience evidently of considerable magnitude. It deals with all that is to be known about artificial eyes, and the reading of it would be of value to every ophthalmic surgeon, who usually has to leave himself pretty much in the hands of the mechanician when it comes to having a glass eye fitted for a patient. The operator will find how much can be done in cases where it is seemingly hopeless to get a glass eye fitted, and the photographs show how well a cunning artificer can disguise the presence of the glass eye, even where there is little prosthesis left.

Dr. Coulomb discusses very clearly the various methods of removal of the eye, and the methods of dealing with bands, granulations, and contracted sockets. In every respect we regard this little book as well worthy of the attention of ophthalmic surgeons and of *ocularistes* in the British Isles.

LESLIE PATON.

Tratado elemental de Oftalmología. Por el Doctor D. SINFORIANO GARCIA MANSILLA. Madrid: Imprenta y Librería de Nicolas Moya, Carretas, 8, y Garcilaso, 6. 1905. Price, 20 pesetas. **Elementary Treatise of Ophthalmology.** By Dr. D. SINFORIANO GARCIA MANSILLA, Professor of Ophthalmology in the Faculty of Medicine of Madrid.

This treatise on ophthalmology, the result of much clinical experience in a busy *clinique*, contains 992 pages, 275 illustrations, and two lithographic plates, each including six figures of the fundus and its diseases. It is about the same size as Fuchs's text-book. Dr. Mansilla has arranged the contents of his work under four heads:—1. Anatomy and histology of the visual apparatus; 2. Physiology; 3. Methods of examining the eye; 4. Diseases and pathology. Physiological optics and methods of examination are treated with great clearness. The author has taken considerable pains to study the close relationship that subsists between affections of the eyes and those of the system generally. Dr. Mansilla's treatise, like every book ever written, contains some defects and omissions, but these the author will doubtless correct or supply in later editions. We believe that Dr. Mansilla's book will prove to be the classical Spanish work on ophthalmology. It can be heartily recommended not only to students but also to those practitioners who have already enjoyed some years of practice.

E. ALVARADO.

Trachoma. By DR. J. BOLDT, Upper Staff-surgeon and Regimental Surgeon to the 9th West Prussian Infantry Regiment. Translated by J. Herbert Parsons and Thos. Snowball. London: Hodder & Stoughton, 1904, pp. 232. Price 7s. 6d. *net*.

Alien immigration has been responsible lately for several things, among them for the present translation of Dr. J. Boldt's *Trachom als Volks-und HeeresKrankheit*, 1903. Messrs. J. H. Parsons and Thomas Snowball have done the work of translation in a scholarly way, and have managed to produce a tolerably readable volume from somewhat unpromising material. The book, however, is stuffed with statistics, and resembles nothing so much as a cyclopædia. It deals with the history, epidemiology, distribution,

symptoms, course, ætiology, diagnosis, prognosis, treatment, and prophylaxis of trachoma, and it is pretty safe to say that few aspects of that disease are neglected. At the same time, the book contains nothing in the least original, and nothing that could not have been produced by an intelligent individual possessed of the necessary perseverance and having access to a well-equipped medical library. In a sense it may be said to recall Sattler's famous *Die Trachombehandlung einst und jetzt* (1891), although without having the practical aim and personal note that formed such distinctive features in the latter production. In view of these facts, it becomes a little difficult to comprehend the reasons that have led to the publication of the present English translation. The book abounds, as might be expected, with references to German, Austrian, Belgian, and French literature. That English literature, on the other hand, is somewhat of a *terra incognita* to the learned and laborious author, will be apparent from the bald fact that the extensive bibliography contains no allusion to the names of Shuttleworth, Mowat, Nettleship, Bridges, Litteljohn, Stephenson, Hutchinson, and others, who in England have written upon the subject of trachoma. Of the earlier British writers, Vetch (1817) is the only one that figures in Dr. Boldt's list. The splendid work of Saunders (1811), Farrell (1811), Ware (1808-1814), MacGregor (1812), Edmonston (1824), O'Halloran (1824), Frank (1860), Welch (1860), and Marston (1862), is passed over without a mention of their names in the bibliography. Yet our present-day knowledge of ophthalmia is owing, in no small measure, to the brilliant researches made in the nineteenth century by these and by other workers.

This omission probably accounts for the somewhat anomalous fact that an introductory chapter, dealing with trachoma in the British Isles, has been contributed to the volume by Mr. E. T. Collins. It must be confessed that, to our mind, Mr. Collins' forty-two pages are of more value than all the rest of the book put together. They provide us with a concise and clearly-written account of epidemic trachoma in Britain and her over-sea dependencies from the return of Sir Ralph Abercromby's troops in 1801 and the following year to the present day. The destructive ophthalmia of the earlier part of the nineteenth century was probably partly gonorrhœal and partly trachomatous. Mr. Collins surmises that the attenuated disease, as it prevails to-day, is due to the absence of the gonorrhœal element, to which he might have added, as potent contributory factors, the great all-round improvement in sanitary conditions, the care that is now taken with epidemic ophthalmia at the outset, and, last but not least, improved methods both of prevention and of

treatment. The course of trachoma in the British Army is traced by Mr. Collins, and in this connection it is interesting to note that, by the military authorities, the extermination of the scourge is attributed to every soldier having a towel of his own, to the unlimited supply of water, and to the better ventilation of the barracks occupied by the men. Mr. Collins then passes forward to describe what may be conveniently called the "ophthalmic history" of the London Poor-Law Schools, of which the first was opened in the year 1849 at Norwood, in Surrey. Some of the more important outbreaks of epidemic ophthalmia that have broken out in these schools are touched upon. The establishment in 1889 of the Ophthalmic School at Hanwell, in order to cope with such an outbreak in the Central District School, is mentioned, and the details that led to its being thrown open to the metropolis in 1893 are alluded to. Lastly, Mr. Collins outlines the steps whereby the Metropolitan Asylums Board were eventually constituted the authority responsible for trachoma cases among the infantile poor-law population. The Asylums Board, as well known, has built two schools for treatment of the disease, one at Brentwood and the other at Swanley. The arrangements, structural and domestic, of these two costly institutions are described, and some idea is given by Mr. Collins of the way the work is carried on. Incidentally mention is made of the modern treatment of trachoma by X-rays and radium, and from this account it appears that the former agent has yielded satisfactory results. Finally, Mr. Collins directs attention to aliens and their influence as a source of trachoma in this country; but into this somewhat vexed question, about which there is yet much to be learned, we have no present intention of entering.

Die Wirkungen von Arzneimitteln und Giften auf das Auge.

Handbuch für die gesammte ärztliche Praxis. Von Dr. L. LEWIN, Professor in Berlin, und Dr. H. GUILLERY, Professor in Cöln. In zwei Bände, mit 99 Textfiguren. Berlin: Hirschwald, 1905, pp. 857 und 1044. **The Action of Drugs and Poisons on the Eye:** A Manual for general medical practice, by Dr. L. LEWIN, Professor in Berlin, and Dr. H. GUILLERY, Professor in Cologne. 1905. Price 52 M.

Professor Lewin and Guillery's work is very useful and welcome. It is the first attempt to supply a complete account of the pharmacology and toxic agents affecting the eye. Numerous drugs have been prescribed in the treatment of diseases of the eye, and excellent papers have been written giving an account of the action of the chief remedies, but these are distributed through *Transactions* of learned societies or lie buried in journals, only to be discovered after long and

wearisome search in their pages or indices. It is, therefore, with great pleasure that in these handsome volumes we find the scattered facts collected, and a reliable account given, not only of the various drugs that have been employed, but of those noxious agents which have been found to impair or to destroy the function of sight, whether taken internally, as in the case of alcohol and tobacco, or topically applied, as in that of the various micro-organisms, and the large group of chemical and physiologically active substances. Many of the latter here described are unknown even to well-informed practitioners, such, for example, as atrosin, mydrol, lactyl tropin, tropyl-lupinin, peronin, and others; short distinctive trade names having been found imperative in view of the extraordinarily complex constitution which some of them possess; nirvanin, for example, which is an uncertain local anæsthetic, being represented by the appalling chemical name of diethylglycocoll-amido-oxybenzoic acid methyl ester.

The general arrangement of the work is that the first volume is occupied with the consideration (1) of those substances which exert a paralysing influence on the nervous system; (2) of those which stimulate or excite the nervous system, and, lastly, (3) of those substances which exert a chemical or physical action upon the metabolism of living proteids. The second volume is almost exclusively taken up with the action of the different forms of bacteria, and with the action of local irritants and poisons. The first of these sections includes chloroform, ether, opium and its derivatives, and local anæsthetics and mydriatics. The second includes alcohol and ethereal oils, tobacco, strychnia, coffee, tea, and local myotics. The third embraces the metalloids and metals, metabolic poisons, like the ptomaines and toxins, which lead to cataract, whilst in the second volume the reader will find a *résumé* of all that is known in regard to the action of the gonococcus, staphylococcus, streptococcus, pneumococcus, and the bacillus tuberculosis, which last is discussed at great length and very instructively. Throughout both volumes illustrative cases, drawn from the works of writers of repute, are given and add greatly to the value of the statements made, as well as to the opinions held by the authors themselves. In many instances the action of drugs upon animals is given, as well as on man. Thus, in regard to one important drug, physostigmine, it is stated that the action in various animals is different, cats and dogs responding strongly, whilst in the rabbit, in amphibia, and fish the myotic effect is slight or imperceptible. In the cat, a drop of a one-half per cent. solution causes very pronounced myosis, though the pupillary borders do not completely meet. In pigeons very small doses cause oscillation of the pupil with a tendency to contraction, but larger ones reduce the size of the

pupil to 1.5 mm. In man the extract of calabar bean produces constriction of the pupil in from 8 to 15 minutes, the effects lasting from two to three days. The weakest solution of physostigmine which perceptibly acts on the pupil is 1 in 12,800 parts of water. The times of action of 0.5 and of 1 and 2 per cent. of physostigmine are given. Maximum contraction with 2 per cent. solutions, is established in from 15 to 20 minutes. A full account is then given of the effects of this agent on the accommodation, some of the authorities quoted being v. Reuss, Mohr, Königstein, Zehender, Jaarsma, Donders, Krenchel, Hess, Lang and Barrett. To this succeeds a description of the imbalance, or want of balance, of the muscles of the eye caused by eserine, the disturbances of vision caused by the change in the diameter of the pupil and the alteration of the accommodation; the changes that may be seen in the fundus of the eye; the changes in the intra-ocular pressure; the effects of the drug on the limits of the field; impairment of the acuteness of vision and its effects in producing nystagmus and spasm of the orbicularis; disturbance of the conjunctiva and of the parts surrounding the globe; lastly, the general symptoms produced by an overdose of the poison.

The section on the metalloids, metals, and acids, embraces the following subjects: iodine, and its preparations; arsenic; phosphorus; mercury; bismuth; chromium; lead; antimony; and sulphuric acid. Of these, the chapter on lead may be selected as constituting a monograph of great value. It extends to over a hundred pages, and gives full details of cases, derived from many sources, of the optic neuritis observed in lead poisoning and its terminations in recovery, atrophy, or death; of albuminuric retinitis with or without albuminuria; hemianopsia and disturbances of the function of the ocular muscles; of the ætiology of saturnine amaurosis, and, finally, of the local toxic effects of lead on the conjunctiva.

There is also a full account of the effects of animal poisons, commencing with the hairs of certain caterpillars, the effects of which are often very serious, such as is seen in those of the *Gastropacha pini*, *rubi*, *trifolii*, and *quercifolia*; those of *Bombyx rubi*, and *lanestræ*; of *Cnethocampa processionalis*; of *Lasiocampa potatoria*, *pini*, and *quercifolia*; of *Liparis monacha*; *Arctia cæja*; *Pieris brassica*, *Portesia chrysorrhæa* and *auriflua* and of *Morpho metellus*, in all of which the hairs appear to be poisonous to man, and even animals do not appear to be immune, since they present in many instances the same local and general effects, and quit woods where such caterpillars abound. The inflammation excited is divided into two chief forms, *Erucismus inflammatorius* and *Erucismus nodulosus*, in accordance with the symptoms produced. Treatment has not proved very efficacious, but weak carbonate

of soda solutions and the application of parsley seem to be the best means. Other animal poisons are those of bees, wasps, ants, spiders, the centipede and scorpion, with a list of *Diptera*, too long to quote, and there is a long list also of *Epizoa* and *Entozoa*, which have been found at different times in or on the eye.

HENRY POWER.

(To be concluded.)

NOTES AND ECHOES.

THE British Medical Association, as readers need scarcely be reminded, will hold its annual gathering in August, 1906, at Toronto, Canada. **British Medical Association.** The local branch of the Association has paid a high compliment to ophthalmology in nominating for the office of President Dr. R. A. Reeve. Dr. Reeve, in addition to holding several other dignified appointments, is professor of ophthalmology and otology in the University of Toronto. **THE OPHTHALMOSCOPE** congratulates both Dr. Reeve and the Association upon the appointment.

* * * *

Obituary.

FROM Montreal the death is announced, at the age of 61 years, of Dr. Frank Buller,* at one time house-surgeon to the Moorfields Hospital, London. He introduced the well-known watch-glass and sticking-plaster shield that goes by his name. Buller graduated in 1869 from Victoria University, Coburg, Ontario, and for seventeen years held the post of ophthalmologist and aurist to the Montreal General Hospital. A few years ago he accepted a similar position on the staff of the Royal Victoria Hospital. Since the year 1883 Buller has been professor of ophthalmology in McGill University. He was a member of the Ophthalmological Society of the United Kingdom. The deaths are also announced of Dr. Louis J. A. Simard, oculist, of Quebec City, and of Dr. J. O. Brookhouse, one of the founders of the Nottingham and Midland Eye Infirmary.

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News Items.

THE Congress for the Repression of the illegal Practice of Medicine, will meet in Paris, under the presidency of Professor Brouardel, on the 30th April, 1906. Dr. Péchin, of Paris, will open a discussion on the

The next number of **THE OPHTHALMOSCOPE** will contain a biographical sketch of Buller, written by his intimate friend, Dr. J. Gardner, of Montreal, Canada.—**EDITORS.**

illegal exercise of ophthalmology. A very practical step has been taken by the Chicago, Milwaukee, and St. Paul Railroad. The men employed by that line complain that their eyes are tested on theoretical rather than on practical grounds. The management have therefore arranged to place ophthalmic surgeons on the engines drawing the express trains, in order to make tests and to examine the exact conditions under which train signals are displayed. The whole question of sight and colour testing will be revised in the light of the knowledge obtained in this way. Arthur H. H. Sinclair, M.D., F.R.C.S.E., has been appointed, for a term of five years, assistant ophthalmic surgeon to the Edinburgh Royal Infirmary. The following gentlemen have been nominated examiners for 1905-1906 in ophthalmic surgery for the diploma of the Fellowship of the Royal College of Surgeons of Edinburgh: George A. Berry, George Mackay, William George Sym, and James Veitch Paterson. Dr. E. Moreau has been appointed *chef de clinique* in the ophthalmological service of service of Professor E. Rollet, at Lyon, France. Legacies have accrued to the Tunbridge Wells Eye Hospital and to the Norfolk and Norwich Eye Hospital.

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Ophthalmological Society.

THE 1905-1906 session of the Ophthalmological Society was inaugurated on October 19th, when the new President, Mr. Priestley Smith, delivered an address on the changes of method in ophthalmology that he had experienced during the last quarter of a century. As exemplified by himself, he traced the gradual evolution and widening of an eye specialist, who to begin with, paid scant attention to the importance of general methods, and later began to see things in their true perspective. In a word, Mr. Priestley Smith dwelt upon the importance of environment and personal habits. The influence of alcohol, tobacco, diet, holidays, and a thousand and one things of that description were touched upon by the lecturer in a more or less interesting way.

* * * *

London Medical Societies:

SPEAKING of medical societies brings one by a process of easy transition to the burning question that is now agitating most of the London medical societies, namely, the amalgamation scheme promoted and fostered by the Royal Medical and Chirurgical Society. A report has recently been issued by the Executive Committee, with regard to this important question of fusion. The 22 societies named in the report as suitable for fusion into an Academy of Medicine would undoubtedly form a large, and in some respects a powerful, organisation. Looking at the scheme from a financial

point of view, the figures given by the Committee do not allow of a large balance of income over expenditure. If the new body is to be a success, it must not be crippled financially. The estimate given appears to provide for bare necessities only, and does not allow for the many items of expenditure which in the event of amalgamation will be sure to turn up in the initial stage. The large debenture debt, over £33,000, of the Royal Medical and Chirurgical Society is unfortunate, as is also the fact that the income (£436) from the Berners Street property ceased at the end of 1904. This considerably weakens the financial position, for a larger sum will have to be provided annually to pay interest alone. With regard to the societies possessing properties and funds, how are they going to benefit by amalgamation? Take the Society in which many of our readers are interested, the Ophthalmological. At the present time the members pay £1 1s. od. per annum, which entitles them to all the benefits of the Society, including the privilege of attending all meetings, the volume of *Transactions*, and, last but not least, the use of the fine special library. If the new Society materialize (which is doubtful) and the Ophthalmological Society decide to join (which is, to say the least of it, still more doubtful), the members will have to pay one guinea to join, and a second guinea if they want to use the library. In other words, they will have to pay two guineas for what now costs them one guinea. But that is not the worst, for under the scheme outlined by the committee, the members of the Ophthalmological Section would lose the power of electing the members of their own special section, inasmuch as the power of veto is vested in the hands of the Council of the Academy of Medicine; male and female members would be eligible for election; and the individual interest now taken by men in such a society as the Ophthalmological would probably dwindle away when the society was merged in the Academy of Medicine. The majority of the smaller societies appear to be doing good and useful work, by building up libraries, arranging lectures and clinical meetings, publishing *Transactions*, and, in many cases accumulating funds, which, if need be, could be utilised for special research work. The Academy, if it come into existence, purposes to take all libraries and all the invested funds of the respective societies, so that the strong will have to help the weak. But it does not at all appear that this assistance will be sufficient to maintain such a society as is proposed by the committee. It was said at the meeting at the College of Physicians earlier in the year that the various societies, as at present constituted, would lose their individuality. The result will be that members of sections will be liable to lose to some extent their interest, because it is a very different thing to be a member of a section

and a member of a self-contained society, managed without any control from a higher authority. At present the members of the smaller societies feel that they can take some part in the management of affairs, and they may aspire to hold office in such societies. This interest spells success from every point of view. It is doubtful if such interest would be taken in a mere section of a large society. The distinction between a "Fellow" and a "Member" of the Academy is at present the mere difference between £3 3s. od., and £1 1s. od., per annum, and a distinctly tempting bait is held out to certain men when they learn that at first, provided only they belong to any of the 22 societies named in the schedule, they can become "Fellows" of the Academy of Medicine without ballot and without entrance fee. It may be noticed that several of the societies included in the scheme already have lady members such as the Obstetrical, the Society of Anæsthetists, the Medico-Psychological, and possibly others. Indeed, there are many details in the scheme proposed by the committee that lie open to serious and possibly to destructive criticism.

* * * *

Ophthalmology in Japan.

A RECENT number (October, 1905) of Dr. Würdemann's excellent periodical, *Ophthalmology*, contains some interesting details concerning eye work in "the land of the rising sun." Ume, Suda, and Tatsuya Inouye are credited with having created modern ophthalmology in Japan. Japan now has three medical faculties (Tokio, Kyoto, and Fukuoka), one higher medical school (Osaka), and nine general medical schools. These various institutions have eleven professors of ophthalmology. Most of the twenty-nine eye specialists have studied in Germany. There is one journal devoted to ophthalmology, the *Nippon-Gankwa-Gakkwai-Zasshi*, published by Professor Onishi in Fukuoka.

* * * *

Ophthalmology in France.

CONTRAST with this the conditions in France. The October number of our contemporary, *L'Ophthalmologie Provinciale*, contains quite a pathetic account by Dr. Bourgeois of his failure to establish a chair of ophthalmology at Rheims, an important town of 108,000 inhabitants. The general hospital at that place appears to possess no special eye department! Dr. Bourgeois tells us that he prefers to operate upon indigent patients at his private *clinique* rather than at the hospital, where the lighting is bad, and eye cases are scattered about among the general surgical beds. In 1902 Bourgeois obtained the permission of the authorities to hold a course of lectures on elementary

ophthalmology, consisting of about twelve lectures, during the summer session. Ten students availed themselves of the privilege. But during the next year a change had come over the spirit of the dream, inasmuch as the students seemed to resent this addition to their existing burdens. Bourgeois accordingly suggested that the course should be made obligatory, and be included among the other clinical lectures given to the students. His suggestion, however, that a chair of ophthalmology should be founded, was negated by the powers that be. Upon this refusal on the part of the authorities, Bourgeois abandoned his fixed lectures, although at the same time he has announced that students will be welcomed at his *clinique*. He now demands that a chair of clinical ophthalmology at each medical school shall be proposed by the Minister of Public Instruction and decreed by the President of the French Republic. It appears that, as matters stand, there are two professors of ophthalmology only among about a dozen of the French provincial schools of medicine, namely, at Angers and at Lyon.

* * * *

A Study in Bibliography.

In a letter in a recent issue of the *Ophthalmic Record* Dr. Edward Jackson, of Denver, U.S.A., has aired a grievance. It seems that in reviewing that useful compilation the "Ophthalmic Year Book" the *Centralblatt für praktische Augenheilkunde*, adopted the somewhat unusual course of selecting, apparently at random, half a dozen authors and of contrasting by means of "the deadly parallel," the references to their writings as given in the "Year Book" and in the corresponding volume of the *Centralblatt*. The comparison turned naturally in favour of the last-named publication. Dr. Jackson, with a fine touch of irony, looked up the references in the *Centralblatt*, as he says, "hoping to find in what directions the Year Book was most defective." The result was distinctly amusing. The Year Book covered the literature for 1903, while the *Centralblatt*, including its supplement (which appeared several months after the close of the year) was supposed to cover a similar period. Dr. Jackson found that of the three references in the *Centralblatt* to papers by Fuchs, two were published in 1902, and the third was mentioned in the Year Book. Of the eight references to Cirincione, as given in the *Centralblatt*, two belonged to 1902, one was in the nature of a controversial letter, a third was a duplicate reference to an article that had been published in two journals, while five references were given in both periodicals. And so on for the other writers selected for this unhappy and invidious comparison.

Dr. Jackson, however, does not rest content with this explanation, but being evidently a born controversialist, carries the war into the enemy's camp. Leaving on one side European writers, he sets out to enquire how the *Centralblatt* had dealt with American authors, and gives the following figures :—

				<i>Year Book.</i>		<i>Centralblatt.</i>
A. Duane	...	...	...	6	...	3
Friedenberg	..	...	...	5	...	1
F. C. Hotz	..	...	...	3	...	1
C. R. Holmes	...	...	...	1	...	0
A. Knapp	...	...	...	3	...	0
G. M. Gould	...	...	...	5	...	0

Dr. Jackson points out that of the 164 American authors referred to in the *Year Book*, 64 were not mentioned in the *Centralblatt*. He concludes his letter with the following parting shot :—
 "In the way of suggesting improved methods for bibliographic work, this study of German thoroughness was disappointing ; but it was rather soothing to one who felt regret for the shortcomings of the *Year Book*."

* * * *

Edinburgh Royal Infirmary.

AT a recent meeting of the Managers of the Edinburgh Royal Infirmary the following minute was adopted with regard to the

retirement of the senior ophthalmic surgeon :—

"The Managers regret that, in consequence of the expiry of his term of office, they must lose the services of Mr. George A. Berry as Senior Surgeon in the Eye Department. They desire to convey to him their sincere thanks for the able and untiring service which he has given the institution during the long period of twenty-three years. They are grateful that a man possessing a world-wide reputation, because of his ability in his special department of surgery, has devoted so much time to the gratuitous care of the afflicted poor. They hope that Mr. Berry's extensive knowledge, operative ability, and other talents may continue to receive that public confidence and recognition which they so richly deserve. In token of their esteem and of their appreciation of his work, the Managers appoint him one of the consulting surgeons to the Eye Department of the Institution."

* * * *

University College, Bristol.

THE prospectus for 1905-1906 of University College, Bristol, which, be it remembered possesses a medical school of some importance, is adorned with an advertisement of a firm of "eyesight and spectacle specialists," recommending students to consult them at their "eyesight testing rooms." *Que diable allait-il dans cette galère ?*

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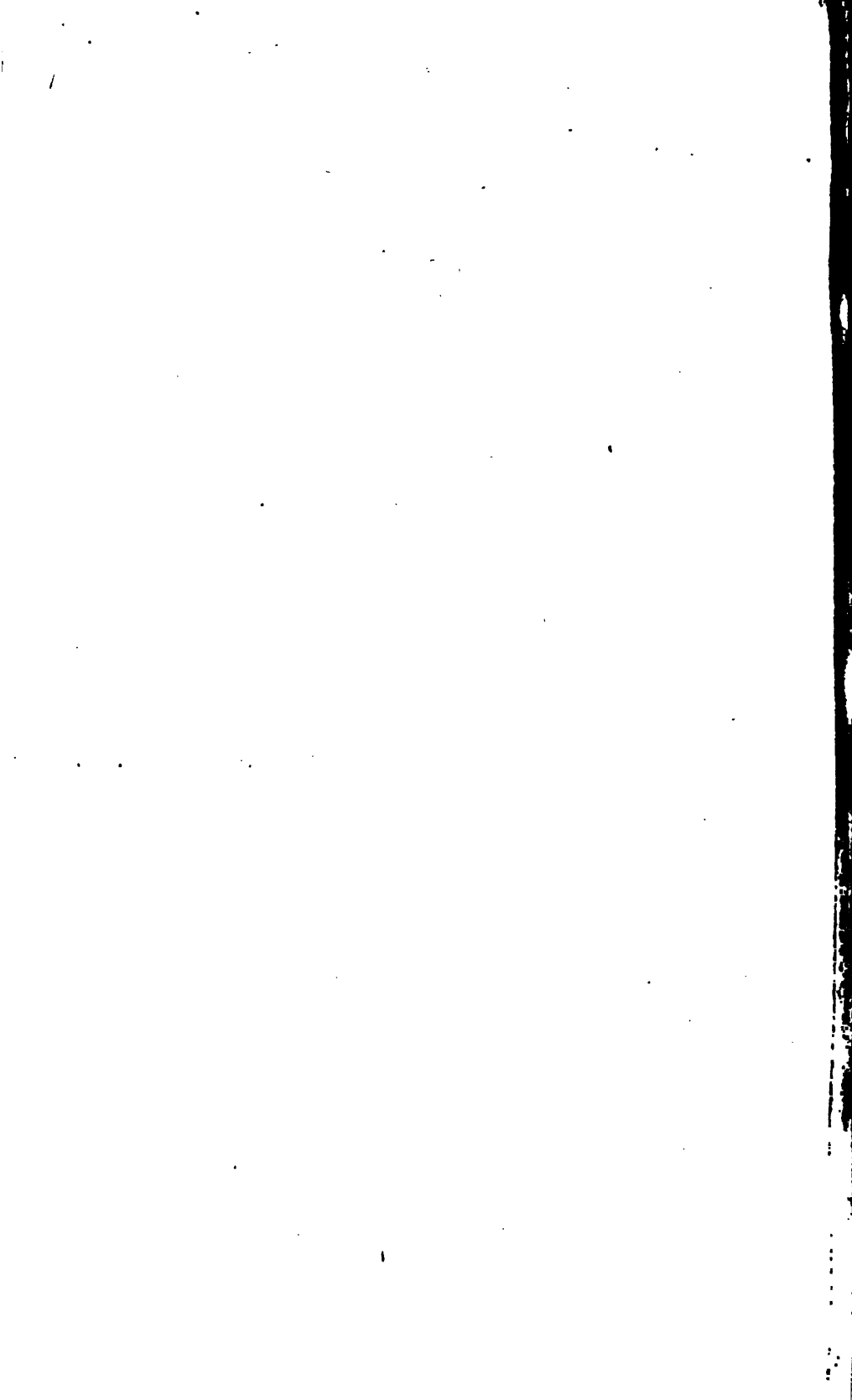
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